



GOVERNMENT OF GUJARAT

STANDARD BIDDING DOCUMENT

Name of Work:- Bid Documents for Construction work of Asphalt Road and R.C.C Road in Various Area, at.Kheralu Nagarpalika, under SJMMSVY (UDP-88) (Year 2024-25) (Savings Amount), Dist:- Mehsana (2nd Attempt)

**CHIEF OFFICER
Kheralu Nagarpalika
Kheralu**

KHERALU NAGARPALIKA

Name of Work:

Bid Documents for Construction work of Asphalt Road and R.C.C Road in Various Area, at.Kheralu Nagarpalika, under SJMMSVY (UDP-88) (Year 2024-25) (Savings Amount), Dist:- Mehsana (2nd Attempt).

NOTICE INVITING ON - LINE TENDER

Details of Tender:

Estimated Tender Value (Rs.)	Rs.1,28,60,423.00
EMD (1% of Tender Amount In Rs.)	Rs.1,28,610.00
Tender fee In Rs.	Rs.4,248.00 (3,600.00 + 18% GST) (Non-refundable)
Class of Agency	Class "C" and above
Time Limit of Work	06 (Six) Months excluding monsoon
Validity of tender	120 Days from Date of opening of the price bid.

Schedule for-tendering is fixed as under:

Last Date & Time of Online bid submission and Downloading of tender	On Date 26/05/2026 up to 18.00 hrs.
Submission of Security Deposit, Tender Fee with supporting documents	Submission of pre-qualification documents through online by scanning and also contractor should have been submitted tender fee, E.M.D and relevant documents through by speed post / R.P.A.D only in sealed cover with Tender ID & Name of work mention on cover & document reach Kheralu Nagarpalika on or before Dt.03/07/2026 up to 18.00 hrs.
Date of Opening of Technical Bid	On Date :04/07/2026 At 11:00 Hrs. (if possible)
Date of Opening of Price Bid	On Date :04/07/2026 At 11:30 Hrs. (if possible)

**CHIEF OFFICER,
KHERALU NAGARPALIKA**

Web Site: <https://tender.nprocure.com>

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INVITATION FOR BID (IFB)

NATIONAL COMPETITIVE BIDDING

- The **Chief Officer, Kheralu Nagarpalika, Kheralu** invites bids for the construction of works detailed in the table.
The bidders may submit bids for any or all of the following works.

TABLE

Package No.	Name of work	Approximate value of works (Rs.)	Bid security (Rs.)	Cost of document (Rs.)	Period of completion	Class of Registration
1 of 2025	Bid Documents for Construction work of Asphalt Road and R.C.C Road in Various Area, at Kheralu Nagarpalika, under SJMMSVY (UDP-88) (Year 2024-25) (Savings Amount), Dist:- Mehsana (2 nd Attempt)	1,28,60,423.00	1,28,610.00	4,248.00 (3,600.00 + 18% GST)	06 (Six) Month	Class "C" and Above

- Prospective / Interested bidder may download the Bid Documents from website <https://tender.nprocure.com> free of cost till the Time and Date as mentioned on online NIT at website <https://tender.nprocure.com>.
- However, Bidder who is submitting the Bid Online will have to pay the Bid Document Fee/ Tender Fee through Demand Draft only of any Schedule Bank payable at **Kheralu** and in favour of '**Chief Officer, Kheralu Nagarpalika**'. Once the Bid is received online, Bid Document / Tender Fee will not be refundable. As Per GoG R&B Department's Circular No. PARACH/102/000/IB/221/ (59)/C Dated.24/01/2007.
The Demand Draft for Bid Document / Tender fee and FDR / Bank Guarantee against Bid Security / EMD shall be submitted in electronic format through online (by scanning) while uploading the bid, this submission shall mean that bid document / tender fee and Bid Security / EMD has been received. Accordingly, the offer of only those shall be opened whose Bid Document / Tender Fee and Bid Security / EMD have been received electronically. However, for the purpose of realization of Demand Draft, and FDR / Bank Guarantee bidder shall send the same in original through R.P.A.D. so as to reach to '**Chief Officer, Kheralu Nagarpalika**' within 7 Days from the last day of bid submission.
Penalitive action for not submitting Demand Draft / FDR / Bank Guarantee in original to Chief Officer / Tender Inviting Authority by bidder shall be initiated. **WRD GR No. PRC-102014-1-MICell-K.1 Dated: 29/10/2014 & Dt.21/05/2022.**
- Bids received online, will be opened on the time, date and place as specified in the online NIT at website <https://tender.nprocure.com> in the presence of the bidders or their authorized representatives, who wish to remain present.
If the office happens to be closed on the day of opening of the bids as specified, the bids will be opened on the next working day at the same time and venue.
- ~~A pre bid meeting will be held on Dt.00/00/2026 at 12.00 hrs. at the office of Chief officer, Kheralu Nagarpalika to clarify the issues and to answer questions on any matter that may be raised at that stage as stated in clause 9.2 of 'instructions to Bidders' of the bidding documents.~~
- Bid Security (EMD) is equal to 1% of Estimated Amount put to bid / tender and should be rounded off to the next thousand rupees.
- Other Information is as under:**
 - Agencies can prepare and edit their offers a number of times before the end of the tender submission date and time. After the tender submission date and time, the bidder cannot modify / edit / withdraw their submitted offer in any case. No written or online request in this regard shall be granted.
 - Offers in physical form will not be accepted in any case.
 - Demand Draft purchased by the other then bidder and issued after the last date of submission of Bids, will not be considered or accepted.
 - The cost incurred by the contractor for this offer for clarification or attending discussion, conferences or site visits will not be reimbursed by the Employer or Engineer-in-Charge.

- E. Conditional tender shall not be accepted.
 - F. Any changes, addition, alternation made in the prescribed form attached with tender are liable to be rejected.
 - G. Any change in format or conditional Bank Guarantee will not be accepted and the bidder will be considered non-responsive.
 - H. All the bidders are instructed to fill in information strictly in accordance with the format given in the checklist /qualification document / tender document.
 - I. It is mandatory for the bidders to supply each and every information as asked strictly in electronic format at appropriate places only.
 - J. Blank/insufficient information shall be treated as nil information and shall result in disqualification.
 - K. Even if the bidder has been qualified in a similar or larger size of project in the past, it shall not be deemed to be a ground / reason for not giving required information for this work / bid.
 - L. Information supplied for earlier projects shall not be considered while evaluation of this bid. The Government will not ask for any other information, unless it is found absolutely necessary by the competent authority.
 - M. If found necessary, the contractor will be intimated for negotiation,
- 8 ~~For the works costing up to Rs.7.5 crore (WRD Works), Rs.7.0 crore (ROAD/BRIDGE/ BUILDING WORKS), Rs.0.5 Crore (Electrical Works) kindly refer to GoG NWRWS & K Department's Circular No.Paracha/1097/1397(11)/pa.fa./MICELL(k-1) dated 18/01/2018 and Dated 30/09/2022~~
- ~~For the works costing under Rs.7.5 crore for Construction work of Water Resources Department, Rs.7.0 crore for Roads, Bridges and Building and Rs.050 crore for Electrical work following documents shall be submitted in electronic format only through online by scanning and the (i) Bid Document Fee/Tender Fee (ii) Bid Security/EMD should be sent in original to the Tender opening authority through RPAD, so as to reach the Chief Officer within 7 days from last day.~~
- (i) Bid Document Fee / Tender Fee
 - (ii) Bid Security / EMD.
 - (iii) Registration Certificate of Appropriate Class.
 - (iv) I.T. Return Copy of Last Three Years Only.
 - (v) Turn Over Certificate 30% of Estimated Amount in Average of Last Three Year
 - (vi) Pan Card
 - (vii) GST Number with last 3 months GST Challan
 - (viii) EPF Number with last 3 months EPF Challan
 - (ix) Current Year solvency certificate of a 20% of the Tender Amount of Scheduled Bank or Nationalized Bank or Bank Approved for Government business.
 - (x) Experience of having successfully completed Asphalt Road works during last 5 year ending last day of month previous to the one in which applications are invited should be either of the following. (Only in Form-3(A) Certificate).
 - (xi) Other Documents, as required. (As per Section 10.)

Documents to be furnished by Bidder as per Qualification criteria

SECTION - 1
INSTRUCTIONS TO BIDDERS
(ITB)

Section1: Instructions to Bidders

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A. GENERAL

1. Scope of Bid

- 1.1 The Employer (Named in Appendix to ITB) invites bids for the Construction of works (as defined in these documents and referred to as 'the works') detailed in the table given in IFB. The bidders may submit bids for any or all of the works detailed in the table given in IFB.
- 1.2 The successful bidder will be expected to complete the works by the intended completion date specified in the Contract data.
- 1.3 Throughout these bidding documents, the terms 'bid' and 'tender' and their derivatives (bidder/tenderer, bid/tender, bidding/tendering, etc.) are synonymous.

2. Source of Funds

- 2.1 The expenditure on this project will be met from the budget of Govt. of Gujarat/Govt. of India for centrally sponsored projects.

3. Eligible Bidders

- 3.1 This Invitation for Bids is open to all eligible bidders.
- 3.2 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a statement that the Bidder is neither associated, nor has been associated, directly or indirectly, with the consultant or any other entity that has prepared the design, specifications, and other documents for the Project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation or supervision of the works, and any of its affiliates, shall not be eligible to bid.

4. Qualification of the Bidder

- 4.1 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary. The proposed methodology should include a program of construction backed with equipment planning and deployment duly supported with broad calculations and quality assurance procedures proposed to be adopted justifying their capability of execution and completion of work as per technical specifications, within stipulated period of completion.
- 4.2 Deleted
- 4.3 Deleted
- 4.4 Deleted

#4.5 QUALIFICATION CRITERIA:

(Applicable for the works which require Pre-Qualification) As Per GoG NWRWS & K Department's Circular No. Paracha/1097/1397(11)/pa.fa./MICELL(k-1) Dated 18/01/2018

- ~~4.5.1 Qualification will be based on Applicant's meeting all the following minimum pass/fail criteria regarding the Applicant's general and particular experience, personnel and equipment capabilities and financial positions, as demonstrated by the applicant's responses in the forms attached to the letter of application (specified requirement for joint ventures are given under para 4.6 below) Subcontractors experience and resources shall not be taken in to account in determining the applicants compliance with the qualifying criteria To qualify for more than one contract, the applicant must demonstrate having experience and resources sufficient to meet the aggregate of the qualification criteria for each contract given in paragraphs 4.5.4, 4.5.5 and 4.5.9 below~~

4.5.2 Base year and Escalation

The base year shall be taken as Current financial year Following enhancement factors will be used for the costs of works executed and the financial figure to a common base value for works completed in India.

<u>Year</u>	<u>Financial Year</u>	<u>Multiplying factor</u>
Base year of inviting tender	20___-20___	1.00
-1	20___-20___	1.10
-2	20___-20___	1.21
-3	20___-20___	1.33
-4	20___-20___	1.46
-5	20___-20___	1.61

Applicant should indicate actual figures of costs and amount for the works executed by them without accounting for the above-mentioned factors.

In case the financial figures and value of completed works are in foreign currency the above enhanced multiplying factors will not be applied. Instead, the current market exchange rate (State Bank of India BC Selling rate as on the last date of submission of the bid) will be applied for the purpose of conversion of the amount in foreign currency into India rupees.

4.5.3 General Experience.

The Applicant shall meet with the following minimum criteria:

- (a) Achieved a minimum annual financial turnover of Rs.---- Crore for works in progress and completed in all classes of civil engineering construction works in any one year, over the last five financial years.
- (b) Experience in successfully completing or substantially completing at least one contract of similar work (.....) of at least 40 percent of the value of proposed contract within the last five financial years.

The works may have been executed by the applicant as prime contractor or as a member of a joint venture or as a nominated sub-contractor. As sub contractor, he should have acquired the experience of execution of all major items of works under the proposed contract. In case a project has been executed by a joint venture, weight towards experience of the project would be given to each joint venture in proportion to their financial participation in the joint venture if work executed jointly otherwise as per the scope of work define in Joint Venture agreement.

Substantially completed works means those works which are at least 90 % completed as on the date of submission (i.e. gross value of work done up to the last date of submission is 90 % or more of the original contract price) and continuing satisfactorily.

For these, a certificate from the employers shall be submitted along with the application incorporating clearly the name of the work, contract value, billing amount, date of commencement of works, satisfactory performance of the contractor and any other relevant information.

(the experience certificate should be signed by the officer not below the rank of EE)

- (c) ~~Contractor should have completed 60% of quantity of principal items of work like concrete, earthwork, pipeline, pumping station etc. within last five financial years. Certificate of competent authority of work done with detail shall be produced.~~

~~4.5.4. Personnel Capabilities.~~

~~Availability for his work of personnel with adequate experience as required; as per Appendix.~~

~~4.5.5 Equipment Capabilities~~

~~Based on the studies carried out by the Engineer, the minimum suggested major equipment to attain the completion of works in accordance with the prescribed construction schedule are shown in the Appendix.~~

~~The bidders should, however, undertake their own studies and furnish with their bid, a detailed construction planning and methodology supported with layout and necessary drawings and calculations to allow the employer to review their proposals. The numbers, types and capacities of each plant/equipment shall be shown in the proposals along with the cycle time for each operation for the given production capacity to match the requirements.~~

~~4.5.6 Financial Position~~

~~The Applicant should give undertaking that he has access to, or has available, liquid assets (aggregate of working capital, cash in hand and uncommitted bank guarantees) and / or credit facilities up to 25 percent of the value of the contract / contracts applied.~~

- ~~4.5.7 The audited balance sheets for the last five years should be submitted, which must demonstrate the soundness of the applicant's financial position, showing long - term profitability including an estimated financial projection for the next two years. If necessary, the employer will make inquiries with the applicant's bankers.~~

~~4.5.8 Litigation History~~

~~The Applicant should provide accurate information on any litigation or arbitration resulting from contracts completed or under execution by him over the last five years. A consistent history of awards against the Applicant or any partner of a joint venture may result in failure of the applicant.~~

~~4.5.9 Disqualification~~

~~Even though the applicants meet the above criteria, they are subject to be disqualified if they have:~~

~~Made misleading or false representation in the forms, statements submitted, and/or Record of poor performance such as abandoning the work, rescinding of contract for which the reasons are attributable to the non - performance of the contractor; consistent history of litigation awarded against the applicant or financial failure due to bankruptcy. The rescinding of contract of a joint venture on account of reasons other than non - performance, such as Most Experienced partner of joint venture pulling out, court directions leading to breaking up of a joint venture before the start of work, which are not attributable to the poor performance of the contractor will, however, not affect the qualification of the individual partners.~~

- ~~4.5.10. The bidder who have applied for corporate Debt Restructuring (CDR) / facing recovery proceedings from financial institutions / facing winding up processing / those under BIFR in the last 5 financial year shall be considered for bid qualification. However if the bank / financial institution has accepted the proposal of debt restructuring on or before the last date of online submission, the same shall be considered for further evaluation. An affidavit by bidder along with~~

certificate from bank must be produced in such cases. In case of Joint Venture agreement, this provision shall be applicable for both lead partner and JV partner.

#4.6 ~~JOINT VENTURE: (Maximum 3 Members i.e. 1 Lead & 2 Others)~~
~~(Applicable only for estimated project cost of 50 Crore and above)~~

4.6.1. ~~Joint ventures must comply with the following requirement:~~

~~(a) Following are the minimum qualification requirements:~~

~~(i) The lead partner shall meet not less than 50 percent of all criteria given in para 4.5.3 & 4.5.6 above. The joint venture must collectively satisfy the criteria of para 4.5.3 & 4.5.6 above. The experience of the other joint venture partners shall be considered if it is not less than 30 percent of the qualifying criteria in para 4.5.3 & 4.5.6 above.~~

~~(ii) Individually each member must satisfy the requirements of para 4.5.7 & 4.5.8 above.~~

~~(b) Bid shall be signed so as to legally bind all partners, jointly and severally, and shall be submitted with a copy of the joint venture agreement providing the joint and several liabilities with respect to the contract.~~

4.6.2. ~~Qualification of a joint venture does not necessarily qualify any of its partners individually or as a partner in any other joint venture. In case dissolution of a joint venture, each one of the constituent firms may qualify if they meet all the qualification requirements, subject to the written approval of the Employer.~~

4.7. ~~Bid Capacity.~~

~~Applicants who meet the minimum qualification criteria will be qualified only if their available bid capacity at the expected time of bidding is more than the total estimated cost of the works. The available bid capacity will be calculated as under:~~

~~Assessed Available Bid Capacity=(A*N*2-B), where~~

~~A= Maximum value of work executed in any one year during the last five years (updated to the price level of the year indicated in appendix) taking into account the completed as well as works in Progress.~~

~~B= Value at current price level of the existing commitments and ongoing works to be completed during the next (period of completion of work for which bids are invited); and~~

~~N= Number of years prescribed for completion of the works for which the bids are invited.~~

~~Note: In Case of joint venture, the available bid capacity will be applied for each partner to the extent of his proposed participation in the execution of the work.~~

4.8 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- Made misleading or false representation in the forms, statements

and Attachments the submitted in proof the qualification requirements; and / or

- Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delay in completion, litigation history, or financial failures etc.; and/ or
- Participated in the previous bidding for the same work and had quoted unreasonably high bid prices and could not furnish rational justification to the employer.

5 One bid per bidder

- 5.1. Each bidder shall submit only one bid for one package. A bidder who submits or participates in more than one bid (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the bidder's participation to be disqualified.

6 Cost of Bidding

- 6.1. The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.

7 Site Visit

- 7.1. The Bidder, at the Bidder's own responsibility and risk is encouraged to visit and examine the Site of work and its surrounding and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works.

The costs of visiting the site shall be at the Bidder's own expense.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

B. BIDDING DOCUMENTS

8 Content of Bidding Documents

8.1 The set of bidding documents comprises the documents listed below and addenda issued in accordance with Clause 10:

Section	Particulars	Volume No.
-	Invitation for Bids	↓
1	Instructions to Bidders	
2	Qualification Information, and other forms	
3	Conditions of Contract	
4	Contract Data	
5	Technical Specifications	II
6	Form of Bid	III
7	Bill of Quantities	
8	Securities and other forms	
9	Drawings	IV
10	Documents to be furnished by bidder	V

8.2. Volumes I, II, III and IV are available online and documents to be furnished by the bidder in compliance to section 2 will be prepared by him and furnished as Volume- V in two parts (refer clause 12).

8.3. The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, and technical specifications, bill of quantities, forms, Annexes and drawings in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk. Pursuant to clause 26 hereof, bids which are not substantially responsive to the requirements of the Bid Documents shall be rejected.

9. Clarification Bidding Documents

9.1 A prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing or through E-mail at the Employer's address indicated in the invitation to bid. The Employer will respond to any request for clarification which he received earlier than 15 days prior to the deadline for submission of bids. Employer's response will be published on website including a description of the enquiry but without identifying its source.

~~9.2. Pre-bid meeting~~

~~9.2.1. The bidder or his official representative is invited to attend a pre-bid meeting which will take place at the address, venue, time and date as indicated in the appendix.~~

~~9.2.2. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.~~

~~9.2.3. The bidder shall be required to submit any questions in writing or e-mail to reach the Employer not later than 03 days before the meeting.~~

~~9.2.4 Minutes of the meeting, including the question raised (Without identifying the source of enquiry) and the responses given will be published without delay on the tender website~~

~~i.e. www.tender.nprocure.com. Any modification of the bidding documents listed in sub- Clause 8.1 which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 10 and not through the minutes of the pre-bid meeting.~~

~~9.2.5. Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.~~

10. Amendment of Bidding Documents

10.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing addenda.

10.2. Any addendum thus issued shall be part of the bidding documents. The Employer will assume no responsibility for the same.

10.3. To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at his discretion, extend as necessary the deadline for submission of bids, in accordance with Sub-Clause 20.2 below.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,
Kheralu

C. PREPARATION OF BIDS

11 Language of the Bid

11.1 All documents relating to the bid shall be in the English language.

12 Documents Comprising the Bid

12.1. The bid be submitted by the bidder as Volume V of the bid document (refer Clause 8.1) shall be in two separate parts:

Part I shall be named “Technical Bid” and shall comprise

- (i) Bid Security in the form specified in Section 8
- (ii) ~~Qualification Information and supporting documents as specified in Section 2~~
- (iii) Certificates, undertakings, affidavits as specified in Section 2
- (iv) Any other information pursuant to Clause 4.5 of these instructions
- (v) Undertaking that the bid shall remain valid for the period specified in Clause 15.1

Part II shall be named “Financial Bid” and shall comprise

- (i) Form of Bid as specified in Section 6
- (ii) Priced Bill of Quantities for items specified in Section 7

12.2. The Bidder shall submit the details / information pertaining to each part i.e. technical as well as financial and must be submitted online only.

12.3. Following documents will be deemed to be part of the bid.

Section	Particulars	Volume No.
Invitation for Bids (IFB)		
1	Instruction to Bidders	Volume I
3	Conditions of Contract	
4	Contract Data	
5	Specifications	Volume II
9	Drawings	Volume IV

13 Bid Prices

13.1 The Contract shall be for the whole works as described in Sub-Clause 1.1, based on the priced Bill of Quantities submitted by the Bidder.

13.2 The bidder shall fill in rates and prices and line item total (both in figures and words) for all items of the Works described in the Bill of Quantities along with total bid price (Both in figures and words). Items for which no rate or price is entered by the bidder will not be paid for by the Bill of Quantities.

13.3 All duties, taxes, and other levies except GST payable by the contractor under the contract, or for any other cause shall be included in the rates, prices and total Bid Price submitted by the Bidder. **(GST will be paid extra)**

13.4 Deleted

13.5 The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 47 of the Condition of Contract **(Irrespective of the time limit and Bid Amount)**

14 Currencies of Bid and Payment

14.1 The unit rates and the prices quoted by the bidder shall be entirely in Indian Rupees. All payments shall be made in Indian Rupees.

15 Bid Validity

15.1 Bids shall remain valid for a period of not less than 120 days after the deadline date for bid submission specified in Clause 20.

15.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified period. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his security for a period of the extension, and in compliance with Clause 16 in all respects.

#16. Bid Security

16.1. The Bidder shall furnish, as part of his Bid, a Bid security in the amount as shown in column 4 of the table of IFB for this particular work. This Bid security shall be in favor of Employer as named in Appendix and may be in one of the following forms;

- a. Bank Guarantee from any scheduled Indian bank, in the format given in Volume III. **(Bank Guarantee is applicable only for Bid Estimated Amount of 01 Crore and above)** and Bank Guarantee of Schedule and Private Banks shall be considered as per GoG Finance Department's Circular No. FD/MSM/e- file/4/2023/0057/D.M.O. Date 21/04/2023 or as per their latest amendment.
- b. Fixed Deposit Receipt issued by any Scheduled Indian Bank or a foreign Bank approved by the Reserve Bank of India.

OR

~~# A Valid Bid Security / EMD Exemption Certificate issued by (1) Road & Building Department or (2) Narmada Water Resources, Water Supply and Kalpsar Department of Govt. of Gujarat. Exemption Certificate is applicable only when Registration Certificate of Appropriate Class and Category of Approved Contractors is required as eligible criteria of bidder.~~

- 16.2. Bank guarantees (and other instruments having fixed validity) issued as surety for the bid shall be valid for 45 days beyond the validity of the bid i.e. total validity of 120+45 = 165 Days
- 16.3. Any bid not accompanied by an acceptable Bid Security and not secured as indicated in Sub-Clauses 16.1 and 16.2 above shall be rejected by the Employer as non-responsive.
- 16.4. The Bid Security of unsuccessful bidders will be returned within 28 days of the end of the bid validity period specified in Sub-Clause 15.1
- 16.5. The Bid Security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.
- 16.6. The bid Security may be forfeited
- (a) If the Bidder withdraws the bid after Bid opening during the period of Bid validity.
 - (b) If the Bidder does not accept the correction of the Bid Price, if any or
 - (c) In the case of a successful Bidders, if the Bidder fails the specified time limit to
 - (i) Sign the Agreement; or
 - (ii) Furnish the requirement Performance Security.
 - (d) #If found necessary, the bidder will be intimated for negotiation, He will be intimated maximum three times within the validity period for negotiation, If contractor does not respond in time, his Bid Security (EMD) will be forfeited and his tender will be rejected. Punitive action will be taken on such contractors. (As per GoG R&B Dept's Gr. No. S/22/2017/6369/D, Dt.08/06/2018)

17. Alternative Proposals by Bidders.

- 17.1. Bidders shall submit offers that fully comply with the requirements of the bidding documents, including the conditions of contract (including mobilization advance or time for completion), basic technical design as indicated in the drawing and specifications. Conditional offers or alternative offers will not be considered further in the process of tender evaluation.

18. Format and Signing of Bid

- 18.1. The Bidder shall prepare documents comprising the bid as described in Clause 12 of these Instructions to bidder as the "Technical Bid" and "Financial Bid" in separate parts to be uploaded.

Signature of Contractor

**Chief Officer
Kheralu Nagarpalika,
Kheralu**

D. SUBMISSION OF BIDS

19. Deleted

20. Deadline for Submission of the Bids

20.1. Complete Bids must be received online by the Employer at the tender website specified above not later than the date indicated in appendix.

20.2. The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which case all right and obligation of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

21. Deleted

22. Modification and Withdrawal of Bids

22.1. Bidders may modify or withdraw their bids online before the deadline prescribed in Clause 20 or pursuant to Clause 23.

22.2 Deleted

22.3. No bid shall be modified or withdrawn after the deadline for submission of Bid.

22.4. Withdrawal or modification of a bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in Clause 15.1 above or as extended pursuant to Clause 15.2 may result in the forfeiture of the Bid security pursuant to Clause 16.

Signature of Contractor

**Chief Officer
Kheralu Nagarpalika,
Kheralu**

E. BID OPENING AND EVALUATION

23. Bid Opening

23.1 The Employer will open all the Bids received including modifications made pursuant to Clause 22, in the presence of the Bidders or their representatives who choose to attend at time, date and the place specified in Appendix in the manner specified in Clauses 20 and 23.3, In the event of the specified date of Bid opening being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day.

23.2. **Deleted.**

23.3. The “Technical Bid” shall be opened. The amount, form and validity of the bid security furnished with each bid will be announced. If the bid security furnished does not conform to the amount and validity period as specified in the invitation for bid (ref. Column 4 and paragraph 3), and has not been furnished in the form specified in Clause 16, the technical bid will not be opened.

23.4. (i) Subject to confirmation of the bid security by the issuing Bank, the bids accompanied with valid bid security will be taken up for evaluation with respect to the Qualification information and other information furnished in part I of the bid pursuant to Clause 12.1.

(ii) If required, the bidder will be asked in writing to clarify his Qualification Documents with respect to any required clarification.

(iii) The bidders will respond in not more than 7 days of issue of the clarification letter.

(iv) Immediately (usually within 3 or 4 days), on receipt of these clarification the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration.

23.5. **Deleted**

23.6 At the time of opening of “Financial Bid”, the names of the bidders were found responsive in accordance with Clause 23.4(iv) will be announced. The bids of only these bidders will be opened. The responsive Bidders’ names, the Bid prices, the total amount of each bid, any discount and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening.

23.7 The time of opening of “Financial Bid”, the names of the bidders were found responsive in accordance with Clause 23.4(iv) will be announced. The bids of only these bidders will be opened. The responsive Bidders’ names, the Bid prices, the total amount of each bid, any discount, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening.

23.8 In case bids are invited for more than one package, the order for opening of the “Financial Bid” shall be in order of estimated amount of Bids from highest to lowest.

23.9 The Employer shall prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Sub-Clause 23.6.

24 Process to be Confidential

24.1 Information relating to the examination, clarification, evaluation, and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by Bidder to influence the Employer’s processing of Bids or award decisions may

result in the rejection of his bid.

25. Clarification of Financial Bids

- 25.1. To assist in the examination, evaluation, and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by e- mail, but no change in the price or substances of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids.
- 25.2 Subject to sub-clause 25.1, no Bidder shall contact the Employer on any matter relating to his Bid opening to the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.
- 25.3. Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decision may result in the rejection of the Bidders' bid.

26. Examinations of Bids and Determination of Responsiveness

- 26.1 During the detail evaluation of "Technical Bid", the Employer will determine whether each Bid (a) meets the eligibility criteria defined in Clause 3 and 4; (b) has been properly signed; (c) is accompanied by the required securities and; (d) is substantially responsive to the requirements of the Bidding document. During the detailed evaluation of the "Financial Bid", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e., priced bill of quantities, technical specifications, and drawings.
- 26.2 A substantially responsive "Financial Bid" is one which confirms all the terms, conditions and specifications of bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works; (b) which limits in any substantial way, inconsistent with the Bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.
- 26.3 If a "Financial Bid" is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

27. Deleted

28. Deleted

29. Evaluation and Comparison of Financial Bids

- 29.1. The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Sub-Clause 26.2.
- 29.2. Deleted.
- 29.3. The Employer reserves the right to accept or reject any variation or deviation. Variation and deviations and other factors, which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer, shall not be taken in to account in Bid evaluation.
- 29.4. The estimated effect of the price adjustment conditions under Clause 47 of the Conditions of Contract, during the period of implementation of the Contract, will not be taken in to account in Bid evaluation.

- 29.5. If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract the Employer may require the Bidder to produce detailed consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the performance security set forth in Clause 34 be increased at the expense of the successful /bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.
- 29.6. A bid which contains several items in the bill of Quantities which are unrealistically priced low and which cannot be substantiated satisfactorily by the bidder may be rejected as non-responsive.

30. Deleted

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

F. AWARD OF CONTRACT

31. Award Criteria

- 31.1. Subject to Clause 32, the Employer will award the contract to the Bidder whose Bid has been determined.
- (i) to be substantially responsive to the Bidding documents and who has offered the lowest evaluated Bid Price; and
 - (ii) to be within the available bid capacity adjusted to account for his bid price which is the lowest evaluation in any of the packages opened earlier than the one consideration.

In no case, the contract shall be awarded to any bidder whose available bid capacity is less than the evaluated bid price, even if the said bid is the lowest evaluated bid. The contract will in such cases be awarded to the next lowest bidder at his evaluation bid price.

32. Employer's Right to Accept any Bid and to Reject any or all Bids

- 32.1. Not with standing Clause 31, the Employer reserves the right to accept or reject any Bid, and to cancel the Bidding process and reject all Bids, at any time prior to the award of contract, without thereby incurring any liability to the affected bidder or Bidder or any obligation to inform the affected Bidder or Bidders of the grounds for the Employer's action.

33. Notification of Award and Signing of Agreement

- 33.1. The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the condition of contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").
- 33.2 The notification of award will constitute the formation of the contract, subject only to the furnishing of a performance security in accordance with the provisions of Clause.
- 33.3. The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and to the successful Bidder, within 28 days following the notification of award along with the Letter of Acceptance. Within 21 days of receipt, the successful Bidder will sign the Agreement and deliver it to the Employer.
- 33.4. Upon the furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.

34. Performance Security

34.1. (A) Within 10 (Ten) days of receipt of Letter of Acceptance, the successful Bidder shall furnish to the Employer an irrevocable and unconditional guarantee from a Bank in the form set forth in Section 8 (the "Performance Security") for an amount equal to 5% (five percent) of its Contract Price. In case of bids mentioned below, the successful Bidder, along with the Performance Security, shall also furnish to the Authority an irrevocable and unconditional guarantee from a Bank in the same form given at Section 8 towards an Additional Performance Security (The "Additional Performance Security") for an amount calculated as under:

- (a) If the Contract Price offered by the Selected Bidder is lower than 10% but up to 20% of the Estimated Project Cost, then the Additional Performance Security shall be calculated @ 20% of the difference in the (i) Estimated Project Cost (as mentioned in Bid Document) - Minus 10% of the Estimated Project Cost and (ii) Contract Price offered by the selected Bidder.
- (b) If the Contract Price offered by the Selected Bidder is lower than 20% of the Estimated Project Cost, then the Additional Performance Security shall be calculated @ 30% of the difference in the (i) Estimated Project Cost (as mentioned in Bid Document) - Minus 10% of the Estimated Project Cost and (ii) Contract Price offered by the selected Bidder.
- (c) This Additional Performance Security shall be treated as part of the Performance Security.

(B) The Performance Security shall be valid beyond 60(sixty) days of the Defects Liability Period and the Additional Performance Security shall be valid beyond 28 (twenty-eight) days of Project Completion Date.

34.2. If the performance security is provided by the successful Bidder in the form of a Bank Guarantee, it shall be issued either (a) at the Bidder's option, by a Nationalized/Scheduled Indian bank or (b) by a foreign bank located in India and acceptable to the Employer. As per GoG Finance Department's Circular No. FD/MSM/e-file/4/2023/0057/D.M.O. Date 21/04/2023 or as per their latest amendment.

34.3. Failure of the successful Bidder to comply with the requirement of Sub-Clause 34.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.

~~35. Advance Payment and Security~~

~~35.1 The Employer will provide an Advance payment on the Contract Price as stipulated in the Conditions of Contract, subject to maximum amount, as stated in the Contract Data.~~

36. Deleted

37. Corrupt or Fraudulent Practices

37.1 The Employer will reject a proposal if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in

completing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract with National Highways Authority of India/ State PWD and any other agencies, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in completing for the contractor, or in execution.

- 37.2 Furthermore, Bidders shall be aware of the provision stated in Sub- Clause 59.2 of the Conditions of Contract.

APPENDIX TO ITB

Clause
Reference With
respect to
Section -I

1. The Name of the Employer is
Chief Officer, Kheralu Nagarpalika
2. ~~The last five years: Not Applicable~~
2024-2025
2023-2024
2022-2023
2021-2022
2020-2021
3. This Annual Financial Turnover Amount is Rs.
..... Lac**Not Applicable....**
4. Value of Work is Rs. **As per Tender Notice**
5. Deleted
6. The cost of electric work is**Not applicable...**
7. The cost of water supply / sanitary works is ...**Not applicable...**
8. ~~Liquid assets and / or availability of credit facilities is Rs.....~~
9. ~~Price level of the financial year 2024-25~~
10. ~~The pre-bid meeting will take place at
Kheralu Nagarpalika, Kheralu.
The technical Bid will be opened at the office of the Kheralu
Nagarpalika, Kheralu on dt
..... at AM/PM~~
11. Address of the Employer: Chief Officer, Kheralu Nagarpalika,
Kheralu
12. Deleted
13. The bid should be submitted latest by As stated
on online NIT
14. The bid will be opened at Chief Officer, Kheralu
Nagarpalika, As stated on online NIT
15. The Bank Draft in favor of
"Chief Officer, Kheralu Nagarpalika".
16. Deleted
17. ~~Escalation factors (for the cost of works executed and financial
figure to a common base value) for works completed~~

[Cl.1.1]

[Cl.4.5.3 (a)]

[Cl.4.5.6]

[Cl.4.5.2]

[Cl. 9.2.1]

[Cl. 20.1 & 20.2]

[Cl. 23.1]

[4.5.2]

<u>Year</u>	<u>Financial Year</u>	<u>Multiplying factor</u>
Base year of inviting tender	2024-2025	1.00
-1	2023-2024	1.10
-2	2022-2023	1.21
-3	2021-2022	1.33
-4	2020-2021	1.46
-5	2019-2020	1.61

#LIST OF KEY PLANT & EQUIPMENT TO BE DEPLOYED ON CONTRACT WORK
[Reference CL.4.5.5]

The contractors shall also give a list of machineries in his possession and which they propose to use on the work.

Sr. No.	Plant or Machinery	Location	Age of Machinery (maximum 15 years)	Make	Capacity	Approximate Value	Remark
1	2(a)	2(b)	3	4	5	6	7

List of Key Personnel to be deployed on Contract Work (Reference Cl. 4.5.4)

#Employment of a qualified site Engineer by the Contractor.

The Contractor shall employ full-time technically qualified staff during the execution of this work as under: -

1. Two graduate Civil Engineers and three diploma Civil Engineers when cost of the work to be executed is more than Rs.50 lakhs.
2. ~~One graduate & two Diploma, Civil Engineers when the cost of the work to be executed is more than Rs.15 lakhs but less than Rs.50 lakhs.~~
3. ~~Minimum two Diploma Civil Engineer when the cost of work is less than Rs.15 lakhs but more than Rs.5 lakhs.~~
4. ~~Minimum One Diploma Civil Engineer for the work when the cost of work to be executed is less than Rs. 5 lakhs. The Engineer so employed for the Government work must have sufficient experience to handle the work independently. Such an Engineer shall have to stay at the site of work and he shall not be entrusted with other duty except this work.~~

In case the contractor or partner of the contractor firm is a Civil Graduate Engineer, Employment of a separate Engineer will not be necessary provided that the Engineer partner himself attends the execution of the work on the site.

Within 15 days of issue of work-order the Contractor will have to furnish to the Deputy Chief Officer-in-charge of the work the Name, Qualifications, copy of mark sheet, Colour Photograph and the appointment order issued such engineers engaged for this contract work. If 15 days after issue of work order such designated Site Engineers do not resume or do not remain present on site of work, the recovery at the rate of Rs.15,000-00 per month per Engineer will be made from the bills/deposit/dues of the contractor. Such recovery shall be non-refundable.

~~SECTION - 2~~
~~QUALIFICATION INFORMATION~~

QUALIFICATION INFORMATION

The information to be filled in by the Bidder in the following pages will be used for the purpose of post qualification as provided for in Clause 4 of the Instruction to Bidders. This information will not be incorporated in the Contract.

1. For Individual Bidders

1.1 Constitution or legal status of Bidder (Attach Copy)

Place of registration _____

Principal place of business _____

Power of attorney of signatory of Bid
(Attach)

1.2 Total value of Civil engineering constructions 20__ 20__

Work performed in the last five years _____ 20__ 20__

(in Rs. Lakhs) _____ 20__ 20__

20__ 20__

20__ 20__

1.2.1 Work performed as prime contractor, work performed in the past as a nominated sub-contractor will also be considered the sub-contract involved execution of all main items of work described in the bid documents, provided further that all other qualification criteria are satisfied (in the same name) on works of a similar nature over the last five years and in current year before the submission of the bid.**

Project Name	Name of the Employer	Description of work	Contract No.	Value of contract (Rs. Crore)	Date of issue of Work order	Stipulated period of completion	Actual date of completion*	Remark explaining reasons for delay & work Completed

*Attach certificate(s) from the Engineer(s) in-charge

**Immediately preceding the financial year in which bids are received.

#1.3.2 Quantities of work executed as prime contractor, work performed, in the past as a nominated sub-contractor, will also be considered provided the sub-contract involved execution of all main items of work described in the bid document, provided, further that all other qualification criteria are recalled (in the same name and style) in the last five years** and in current year before the submission of the bid.

* To be modified as per the nature and scope of work

Year	Name of the work	Name of the Employer	Quantity of work performed (Cum/MT)				Remarks* (indicate Contract Ref)
			Cement Concrete (Including RCC & PCC) ITEM 1	Masonry ITEM 2	Earth Works ITEM 3	Bituminous Work ITEM 4	
20-20							
20-20							
20-20							
20-20							
20-20							

1.4 Information on Bid Capacity (works for which bids have been submitted and works which are yet to be completed) as on the date of this bid.

(A) Existing commitments and on-going works:

Description of works	Place & State	Contract No.	Name & Address of Employer	Value Contract (Rs. Cr)	Stipulated Period of Completion	Value of Works* remaining to be completed (Rs. Cr)	Anticipated of completion
1	2	3	4	5	6	7	8

*Attach certificate(s) from the Engineer(s) in-charge

**Immediately preceding the financial year in which bids are received.

1.5 Availability of key items of Contractors Equipment for carrying out the works (Ref. Clause 4.5.5). The Bidder should list all the information requested below.

Item of Equipment	Requirement		Availability Proposals			Remarks (from whom to be purchased)
	No	Capacity	Owned/ Leased to be procured	Nos./ Capacity	Age/ Conditions	

~~1.6 Qualifications and experience of key personnel required for administration and execution of the contract. Attach biographical data. Refer also to Sub Clause 9.1 of the Conditions of Contract.~~

Position	Name	Qualification	Year of Experience (General)	Year of experience in the proposed position
Project Manager				
Etc.				

~~1.7 Proposed sub-contract and firms involved~~

Sections of the works	Value of Sub-Contractor	Sub-Contractor (Name & Address)	Experience in similar work

~~Attach copies of certificates on possession of valid license for executing water-supply/ sanitary work/ building electrification works.~~

~~1.8 Financial reports for the last five years: balance sheets, profit and loss statements, auditors' reports (in case of companies/corporations), etc. List them below and attach copies.~~

~~1.9 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit, etc. List them below and attach copied documents.~~

~~1.10 Name, address, and telephone, telex, and fax numbers of the Bidders bankers who may provide references if contacted by the Employer.~~

~~1.11 Information on Litigation history in which the Bidder is involved.~~

Other- Party (ies)	Employer	Cause of Dispute	Amount Involved	Remarks showing Present Status

~~1.12. Statement of compliance under the requirements of Sub Clause 3.2 of the instruction to Bidders. (Name of Consultant engaged for project preparations is-
*)~~

~~1.13 Proposed work method and schedule. The Bidder should attach descriptions, drawings and charts as necessary to comply with the requirements of the Bidding documents. (Refer ITB Clause 4.1)~~

~~1.14 Programme~~

~~2. Deleted~~

~~3. Additional Requirements~~

~~3.1 Bidders should provide any additional information required to fulfill the requirements of Clause 4 of the Instructions to the Bidders, if applicable.~~

~~(i) Affidavit~~

~~(ii) Undertaking~~

~~* Fill the name of Consultant~~

**~~SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR
AVAILABILITY OF CREDIT FACILITIES~~**

~~(CLAUSE 4.5.6 OF ITB)~~

~~BANK CERTIFICATE~~

~~This is to certify that M/s. _____ is a reputed company
with a good financial standing.~~

~~If the contract for the work, namely _____ is awarded to the
above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs.
_____. To meet their
working capital requirements for executing the above during the contract period.~~

(Signature)

Name of Bank

Senior Bank Manager

Address of the Bank

AFFIDAVIT

1. ~~I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.~~
2. ~~The undersigned also hereby certifies that neither our firm M/s. _____ have not abandoned any work of Government of Gujarat/Government of India/any Board or Corporation under Government of Gujarat/Government of India nor any contract awarded to us for such works have been rescinded, during last five years prior to the date of this bid.~~
3. ~~The undersigned hereby authorize(s) and request (s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding any (our) competence and general reputation.~~
4. ~~The Undersigned understands and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the Department/ Project implementing agency.~~

(Signed by an Authorized Officer of the Firm)

Title of Officer

Name of Firm

Date

UNDERTAKING

I, the undersigned do here by undertake..... that our firm
M/s..... would invest a minimum cash
Up to 25% of the value of the work during implementation of the contract.

(Signed by an Authorized officer of the firm)

Title of officer

Name of firm

DATE

SECTION - 3
CONDITIONS OF CONTRACT

Conditions of Contract

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CONDITIONS OF CONTRACT

A. GENERAL.

1. Definitions

- 1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meaning.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid

Compensation Events are those defined in Clause 44 hereunder

The **Completion Date** is the date of completion of the Works as certified by the Engineer in accordance with Sub Clause 55.1

The Contract is the contract between the Employer and Contractor to execute, complete and maintain the Works **till the completion of Defects Liability Period**. It consists of the documents listed in Clause 2.3 below.

The **Contract data** defines the documents and other information which comprise the Contract.

The **Contractor** is a person or corporate body whose Bid to carry out the Work has been accepted by the Employer.

The **Contractor's Bid** is the completed Bidding document submitted by the Contractor to the Employer and includes Technical and Financial Bids.

The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days: **months** are calendar months.

The **Defects Liability Period** is the period named in the Contract Data and calculated from the Completion Date.

The **Employer** is the party who will employ the Contractor to carry out the Works.

The **Engineer** is the person named in the Contract Data (or any other competent person appointed and notified to the contractor to act in replacement of the Engineer) who is responsible for supervising the Contractor, administering the Contract, certifying payments due to the Contractor, issuing and valuing Variations to the Contract, awarding extensions of time, and valuing the Compensations Events.

Equipment is Contractor's machinery and vehicles brought temporarily to the site to construct the Works.

The **Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time.

Materials are all supplies, including consumables, used by the contractor for incorporation in the works.

Plant is any integral part of the work which is to have mechanical, electrical, electronic or chemical or biological functions.

The **Site** is the area defined as such in the Contract Data.

Site Investigation Reports are those which were included in the Bidding documents and are factual interpretive reports about the surface and subsurface conditions at the site.

Specifications means the Specifications of the works included in the Contract and any modification or addition made or approved by the Engineer.

The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence execution of the works. It does not necessarily coincide with any of the Site Possession Dates.

A **Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.

Temporary Works are works designed, constructed, installed, and removed by the Contractor which are needed for construction or installation of the Works.

A **Variation** is an instruction given by the Engineer, which varies the Works. The **Works** are what the Contract requires the Contractor to construct, install, and turn over to the Employer, as defined in the Contract Data.

2. Interpretation

- 2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter and the other way around. Heading have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about Conditions of Contract.
- 2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion date, and Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole works)
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority
 - (1) Agreement
 - (2) Letter of Acceptance, notice to proceed with works
 - (3) Contractor's Bid

- (4) Contract Data
- (5) Conditions of Contract including Conditions of Contract
- (6) Specifications
- (7) Drawings
- (8) Bills of quantities and
- (9) Any other document listed in the Contract Data as forming part of the Contract.

3. Language and Law

- 3.1 The language of the Contract and the law governing the Contract are stated in the Contract Data.

4. Engineers Decisions

- 4.1 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

5. Delegation

- 5.1 The Engineer may delegate any of his duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

6. Communications

- 6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

7. Sub-Contracting

- 7.1 The Contractor may subcontract any portion of work, up to a limit specified in contract data, with the approval of the engineer but may not assign the Contract without the approval of the Employer in writing. Subcontracting shall not alter the Contractor's obligations. **Sub-contracting of supply or specific items of work is not allowed.**
- 7.2 The sub-contractor must be registered in appropriate class and category for the part of work to be subcontracted.

8. Other Contractors

- 8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities and the Employer between the dates given in the Schedule of other Contractor. The Contractors shall as refer to in the Contract Data, also provide facilities and services for them as described in the Schedule. The employer may modify the schedule of other contractors and shall notify the contractor of any such modifications.

9. Personnel

- 9.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.
- 9.2 If the engineer asks the Contractor to remove a person who is a member of the Contractor Staff or his work force stating the reasons the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.

10. Employer's and Contractors Risks

- 10.1 The Employer carries the risk which these Contract states are Employer's risks, and the Contractor carries the risks which these Contracts states are Contractors risk.

11. Employer's Risks

- 11.1 The employer is responsible for the excepted risks which are (a) in so far as they directly affect the execution of the Works, the risks of war, hostilities, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot commotion or disorder (unless restricted to the Contractor's employees), and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive.

12. Contractor's Risks

- 12.1 All risks of loss of or damages to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.

13. Insurance

- 13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start date to the end of the Defects Liability Period, in the amounts and deductibles stated in the Contract data for the following events which are due to the Contractor's risks:

- (a) Loss of or damage to the works, Plant and materials,
- (b) Loss of or damage to Equipment
- (c) Loss of or damages of property (except the Works, Plant, Materials and Equipment) in connection with the Contract; and
- (d) Personal injury or death.

- 13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may affect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

13.4 Alterations to the terms of an insurance shall not be made without the approval of the Engineer.

13.5 Both parties shall comply with any conditions of the insurance policies.

14. Site Investigation Report

14.1 The Contractor in preparing the Bid shall rely on any site Investigation reports referred to in the Contract Data, supplemented by any information available to the Bidder.

15. Queries about the Contract data

15.1 The engineer will clarify queries on the Contract Data

16. Contractor to Construct the Works

16.1 The Contractor shall construct and install the works in accordance with the specification and Drawings.

17. The Works to be completed by the Intended Completion Date

17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the programme submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion date

18. Approval by the Engineer

18.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary works to the Engineer, who is to approve them if they comply with the Specifications and drawings.

18.2 The Contractor shall be responsible for design of temporary works.

18.3 The Engineer's approval shall not alter the contractor responsibility for design of the Temporary works.

18.4 The Contractor shall obtain approval of third parties to the design of the Temporary works where required.

18.5 All Drawings prepared by the Contractors for the execution of the temporary or permanent work are subject to prior approval by the Engineer before their use.

19. Safety

19.1 The Contractor shall be responsible for the safety of all activities on the Site.

20. Discoveries

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the site is the property of the Employer. The contractor is to notify the engineer of such discoveries and carry out the Engineer's instructions for dealing with them.

21. Possession of the Site

21.1 The Employer shall give possession of all parts of the site to the Contractor. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be a Compensation Event.

21.2 If within 25% of the time limit of the project, 80% of possession of the site is not handed over to the Contractor, then contractor/ Employer may foreclose the contract. Contractor/Employer has to foreclose the work within 30 days after lapse of 25%-time limit and after 30 days foreclosure option will be closed.

22. Access to the Site

22.1 The Contractor shall allow the Engineer and any person authorized by the Engineer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plants are being manufactured/ fabricated/ assembled for the works.

23. Instructions

23.1 The Contractor shall carry out all instructions of the Engineer pertaining to works which comply with the applicable laws where the site is located.

23.2 The Contractor shall permit the Employer to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Employer, if so required by the Employer.

24. Disputes

24.1 If the Contractor is of the view that a decision taken by the Engineer was either outside the authority given to the Engineer by the Contract or that the decision was wrongly taken, the decision shall be referred to **Chief Officer, Kheralu Nagarpalika** (Higher Authority) within 14 days of the notification of the Engineer's decision. If the issue is not resolved, any party can refer the matter for conciliation within 15 days from the decision given by the **Chief Officer, Kheralu Nagarpalika**.

24.2

(a) For the work up to Rs.100 Cr., if any of the parties is not satisfied with the decision of the **Chief Officer, Kheralu Nagarpalika**, both the parties have to refer to the Chief Engineer (Saurashtra-N.W.R.W.S. & KD) concern for the conciliation process.

(b) For the work more than Rs.100 Cr., if any of the parties is not satisfied with the decision of the **Chief Officer, Kheralu Nagarpalika**, both the parties have to refer to the Secretary, N.W.R.W.S. & K. Department, Government of Gujarat for the conciliation process.

If the dispute is not resolved through the conciliation process, he may refer the dispute to Gujarat Public Works Contract Dispute Arbitration Tribunal. If the Contractor fails to refer a claim / dispute to the Higher Authority within 14 days of the notification of the Engineer's decision, the Contractor shall not be entitled to any additional payment/claim if he doesn't follow the above sequence in stipulated time and he should not stop the work.

25. Procedure for Disputers

25.1 The arbitration shall be conducted in accordance with the arbitration procedure stated in the Special Conditions of Contract.

26. Deleted

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

B. TIME CONTROL

27. Programme

- 27.1 Within the time stated in the Contract Data the Contractor shall submit to the Engineer for approval a Programme showing the general methods, arrangements orders, and timing for all the activities in the works along with monthly cash flow forecast.
- 27.2 An update of the Programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.
- 27.3 The Contractor shall submit to the Engineer, for approval an updated programme at intervals no longer than the period stated in the Contract data. If the Contractor does not submit an updated programme within this period, the Engineer may withhold the amount stated in the Contract data from the next payment after the date on which the overdue programme has been submitted.
- 27.4 The Engineer's approval of the programme shall not alter the Contractor's obligations. The Contractor may revise the programme and submit it to the Engineer again at any time. A revised programme is to show the effect of Variations and Compensations events.

28. Extension of the Intended Completion Date

- 28.1 The Engineer shall extend the Intended Completion Date if a compensation Event occurs or a Variation is issued which makes it impossible for completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.
- 28.2 The Engineer shall decide whether and by how much to extend the Intended Completion Date within 35 days of the Contractor asking the Engineer for a decision upon the effect of a compensation event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.
- 28.3 The Engineer shall within 14 days of receiving full justification from the contractor for extension of Intended Completion Date refer to the Employer his decision. The employer shall in not more than 21 days communicate to the engineer the acceptance or otherwise of the Engineer's decision. If the employer fails to give his acceptance, the Engineer shall not grant the extension and the contractor may refer the matter under Clause 24.1

29. Deleted

30. Delays Ordered by the Engineer

- 30.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the works.

31. Management Meetings

- 31.1 Either the Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.
- 31.2 The Engineer shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken is to be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

32. Early Warning

- 32.1 The Contractor is to warn the Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract price or delay the execution of works. The Engineer may require the contractor to provide an estimate of the expected effect of the future event or circumstance on the contract price and completion date. The estimate is to be provided by the Contractor as soon as reasonably possible.
- 32.2 The Contractor shall cooperate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

C. QUALITY CONTROL

33. Identifying Defects/ Defect liability period

33.1 : Defect liability period: The contractor shall be responsible to make good and remedy at his own expense any defect which may develop or may be noticed before the period mentioned hereunder from the certified date of completion. The Engineer in charge shall give the contractor a notice in writing about the defects and the contractor shall make good the same within 15 days of receipt of the notice. In the case of failure on the part of the contractor, the Engineer- in-charge may rectify or remove or re-execute the work at the risk & cost of the contractor. The Engineer-in-charge shall be entitled to appropriate the whole or any part of the amount of security deposit towards the expenses, if any, incurred by him in rectification, removal or re-execution. The Defects Liability period shall be as under....

~~A. For works of WRD Except Building~~

~~(a) (1) For all works costing up to Rs. 50,000 (amount put to tender), the period shall be 3 Months from the certified date of completion.~~

~~(b) (1) For WRD works likes Check Dam/ Canal / Drainage / Road Structure tender amount from RS. 50,000 to 10,00,000, the defect liability period shall be 12 months from the certified date of completion.~~

~~(2) For WRD work except likes Check Dam/ Canal / Drainage / Road Structure tender amount from RS. 50,000 to 10,00,000, the defect liability period shall be 6 months from the certified date of completion.~~

~~(c) (1) For WRD works likes Check Dam/ Canal / Drainage / Road Structure tender amount more than RS. 10,00,000, the defect liability period shall be 3 Years from the certified date of completion.~~

~~(2) For WRD work except likes Check Dam/ Canal / Drainage / Road Structure tender amount from RS.10,00,000 to 1 Crore, the defect liability period shall be 12 months from the certified date of completion.~~

~~(d) (1) For all WRD works of tender amount more than RS. 1 Crore, the defect liability period shall be 3 Years from the certified date of completion~~

~~B. For Building works of WRD:-~~

~~For Building works of WRD, Follow the R&B Circular dated.03/12/2009~~

~~For original building works the defect liability period will be 4 years or elapse of 4 monsoon period following date of possession of building taken over by user agency following the certified date of completion, whichever is later.~~

~~For the purpose of deciding the monsoon period, the 30th September shall be treated as the last date.~~

~~WRD Circular No. Matas/102013/MICELL(K-1) Dated 13/12/2013~~

33.2 For Road Works:

Free maintenance guarantee period for works of Road/Bridge construction

(a) For resurfacing work of road free maintenance guarantee period one year from the date of completion.

(b) In case of widening of the road/strengthening of the road/bridge, the contractor shall have to give four years free maintenance guarantee from the certified date of completion. During this period the contractor shall visit the site every six months along with the concerned Section Officer/Deputy Chief Officer and will examine the work already carried out in this contract like road work, jungle cutting, side shoulders, side gutter, road furniture, patta etc. and will prepare Km. wise inspection

report duly signed by all concerned and any defect observed shall be done within 15 days by the contractor at his risk and cost as per the direction of Engineer in charge. The contractor needs to do videography of these visits and require to submit at the time of release of FMG. If B.T. the surface during the maintenance period of 4 years is worn out then agency shall have to provide renewal coating as per tender item as directed by the Engineer in charge. The amount equivalent to 5% of each running bill shall be withheld and will be released after the free maintenance guarantee period (i.e. 4 years) is over.

However, this amount shall be released against fixed deposit or bank guarantee pledged in the name of Chief Officer after completion certificate of work is issued.

(1) The flakiness and elongation index (combined) for coarse aggregates under no circumstances shall exceed the allowable limit set forth in the relevant clause for the material in question.

(2) 2% of the amount eligible for the payment of bituminous items shall be withheld till the miscellaneous items like earthwork in embankment / cutting for side shoulders, side gutters, kilometer / indicator / guard stones, sign boards etc. are completed in all respect by the contractor. After completion of the miscellaneous items, the above said 2% withheld amount shall be released.

(Govt. of Gujarat's G.R. No.: TNC-10-2013-3(Part-3)/C, Dtd. 13/12/2013).

(3) Videography for the surface under Maintenance Guarantee is to be done as per Govt. letter No.: SSR/10/2015-16/26/C, Dtd. 26/11/15 for the work costing more than Rs. 5.00 Crore.

(4) Setting up of adequate laboratory & deployment of quality engineers. The contractor shall have to set up the laboratory with adequate equipment. Till the setting up of adequate laboratory is completed & reported of this to the engineer (subject to due verification by engineer's representative) by contractor in writing, Rs.2,00,000/- shall be withheld. The qualified quality Engineer shall be deployed exclusively for this contract by the contractors. If quality Engineer is not deployed by contractor within one month after the date of work order, the amount equivalent to Rs.20,000 per month shall be recovered till the actual deployment of quality engineer. The amount so recovered towards the deployment of quality engineers shall not be refunded.

(5) Asphalt work will have to be cross checked as per G.R. No.: RGN/60/2006/35/C, dtd.31/05/07 before final bill is paid.

(6) Maintenance during Construction Period

During the Construction Period, the Contractor shall maintain, at his own risk and cost, the existing lane(s) of the road so that the traffic

~~worthiness and safety thereof are at no time materially inferior as compared to their condition 10 (ten) days prior to the date of the Agreement, and shall undertake the necessary repair and maintenance works for this purpose; provided that the Contractor may, at his cost, interrupt and divert the flow of traffic if such interruption and diversion is necessary for the efficient progress of works and conforms to Good Industry Practice; provided further that such interruption and diversion shall be undertaken by the Contractor only with the prior written approval of the Chief Officer which approval shall not be unreasonably withheld. For the avoidance of doubt, it is agreed that the Contractor shall at all times be responsible for ensuring safe operation of the road.~~

- 33.3 The Engineer shall check the Contractor's work and notify the Contractor of any defects that are found. Such checking shall not affect the Contractor's responsibilities the Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect.

34. Tests

- 34.1 If the engineer instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no defect the test shall be a Compensation Event.

- 34.2 #1% of the amount of work done for works upto Rs. 10 crore of estimate cost should be deducted from R.A. Bill of the contractor for testing the quality of material workmanship. Whereas for estimated cost of works more than 10 crore, the charges for testing of quality of material workmanship shall be deducted from R.A. bill of contractor as per actual charges. ~~As Per GoG NWRWS & K Department's Circular No. PARCH/132023/401/MICELL Dated: 05/10/2023~~

- 34.3 Agency has to establish testing laboratory on site for the various test to be carried out in the work for this purpose agency shall construct a ~~pukka~~ laboratory ~~building~~ with all facility on site at location specified by the engineer in charge.

35. Correction of defects

- 35.1 The engineer shall give notice to the Contractor of any defects before the end of the defects Liability Period, which begins at Completion and is defined in the contract data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

- 35.2 Every time notice of a Defect is given, the Contractor shall correct the notified defect within the length of time specified by the Engineer's notice.

36. Uncorrected Defects

- 36.1 If the Contractor has not corrected a defect within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika

D. COST CONTROL

37. Bill of Quantities

- 37.1 The bill of Quantities shall contain items for the constructions, installation, testing and commissioning work to be done by the Contractor.
- 37.2 The bill of Quantities is used to calculate the Contract price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

38. Change in the Quantities

- 38.1 The Engineer shall have power to make any alterations in or addition to the original specifications , drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work and the contractor shall be bound to carry out the work in accordance with any instruction in this connection which may be given to him in writing signed by the Engineer and such alteration shall not invalidate the contract and any additional work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respects on which he agreed to do the main work and at the same rate as are specified in the tender for the main work.

Except that when the quantity of any item exceeds the quantity as in the tender by more than 130%, the contractor will be paid for the quantity in excess of 130%, at the rate entered in the SOR of the year during which the excess in quantity is first executed.

39. Variations

- 39.1 All Variations shall be included in updated programmers produced by the Contractor.

40. Payments for Variations

- 40.1 If the additional or altered work includes any class of work for which no rate is specified in this contract, then such class of work shall be carried out as under.
- (i) At the rate derived from the item within the contract which is comparable to the one involving additional or altered class of work; where there are more than one comparable items, the item of the contract which is nearest in comparison with regard to class or classes of the work involved shall be selected and the decision of the Superintending Engineer as to the nearest comparable item shall be final and binding on the contractor.
 - (ii) If the rate cannot be derived in accordance with (i) above, such class of works shall be carried out at the rate entered in the Schedule of Rates of the division for the year in which the tender was received, increased or decreased by the percentage by which the tender amount is more or less as compared to the amount arrived at the rates in the "Schedule of Rates" of the Division in the year in which the tender was received. If the Schedule of rates of the Division does not contain all the items, the percentage increase or decrease of the tender shall be calculated considering such items which were included in the "Scheduled Rates" of the division for the

year and for materials consumed on such item the rate to be charged would be the basic rate taken into account for fixing the rate in S.O.R. referred to above.

- (iii) If it is not possible to arrive at the rate from (i) and (ii) above, such class of work shall be carried out at the rate decided by the competent authorities on the basis of detailed rate analysis after hearing the contractor before a Committee of two Superintending Engineers stationed at the same place or the nearest place.

- 40.2 If the additional or altered work, for which no rate is entered in the "Schedule of Rates" of the Division is ordered to be carried out before the rate is agreed upon, then the contractor shall within seven days of the date of receipt by him of the order to carry out the work, inform the Engineer-in-charge of the rate, which it is his intention to charge for such class of work and if the Engineer in charge does not agree to this rates, he shall by notice in writing be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner as he may consider it advisable, provided always that if the contractor shall commence work or incur any expenditure in regard thereof before the rates shall have been determined as lastly herein before mentioned, then in such cases he shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of the determination of the rate as aforesaid according to such rate or rates as shall be fixed by the Engineer-in-charge. In the event of the dispute, the decision of the Superintending Engineer of the Circle shall be final.

Where, however, the work is to be executed according to the designs, drawings and specifications recommended by the contractor and accepted by the competent authority, the alternation above referred to shall be within the scope of such designs, drawings and specifications appended to the tenders.

The time limit for the completion of the work shall be extended in the proportion that the increase in the cost occasioned by alterations bears to the cost of the original work and the certificate of the Engineer-in-charge as to such proportion shall be final and conclusive.

41. Cash Flow Forecasts

- 41.1 When the programme is updated, the contractor is to provide the engineer with an updated cash flow forecast.

42. Payment certificates.

- 42.1 The Contractor shall submit to the Engineer monthly statements of the estimated value of the work completed less the cumulative amount certified previously.
- 42.2 The Engineer shall check the Contractor's monthly statement within 14 days and certify the amount to be paid to the Contractor after taking in to account any credit or debit for the month in question in respect of materials for the works in the relevant amounts and under conditions set forth in sub-clause

32.3 of the Contract Data (secured Advance).

- 42.3 The value of work executed shall be determined by the Engineer.
- 42.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.
- 42.5 The value of work executed shall include the valuation of variations and compensation events.
- 42.6 The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information

43. Payments

- 43.1 Payments shall be adjusted for deductions for advance payments, retention, other recoveries in terms of the contract and taxes at source, as applicable under the law. The Employer shall pay the Contractor the amounts certified by the Engineer within 28 days of the date of each certificate.
- 43.2 Payment of GST (prevailing rates) on the amount payable under the contract to the Contractor will be made by the Employer. Hence, it is the responsibility of the contractor to pay the GST to the concerned Authority.
- 43.3 Items of the works for which no rate or price has been entered in will not be paid by the Employer and shall be deemed covered by other rates and prices in the Contract.

44. Compensation events

- 44.1 The following are compensation Events unless they are caused by the Contractor:
 - (a) The Employer does not give access to a part of the Site by the site Possession date stated in Contract data to the Contractor
- 44.2 In case of compensation event occurs and it prevents the work being completed beyond the Intended Completion Date then Authority will approve EOT with eligible contractual price escalation.

45. Tax

- 45.1 The rates quoted by the Contractor must be inclusive of all taxes prevailing on due date of bid submission except GST. However, any subsequent changes in the tax structure by Government after due date of bid submission will be compensated (+/-) on availability or submission of actual documentation. Contractor will have to intimate Engineer regarding changes occurred in the tax structure after bid submission. If the contractor fails to provide such information and if any financial obligation may arise due to change in tax structure, same will be recovered from the contractor.
- 45.2 GST will be paid separately on the bills. Hence, it is the responsibility of the contractor to pay the GST to the concerned Authority.

46. Currencies.

- 46.1 All payment shall be made in Indian Rupees.

47. Price Adjustment

47.1 Contract price shall be adjusted for increase or decrease in rates and price of labour, materials, fuels and lubricants in accordance with the following principles and procedures and as per formula given in the contract data:

(a) The price adjustment shall apply for the work done from the start date given in the contract data up to end of the initial intended completion date or extensions granted by the Engineer and shall not apply to the work carried out beyond the stipulated time for reasons attributable to the contractor.

(b) The price adjustment shall be determined during each month from the formula given in the contract data.

(c) Following expressions and meanings during to the work done during each month

R = Total value of work done during the month. It would include the amount of secured advance granted, if any, during the month less the amount of secured advance recovered, if any during the month. It will exclude value for works executed under variations for which price adjustment will be worked separately based on the terms mutually agreed.

47.2 To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provisions of this or other clause in the contract, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.

48. Retention

48.1 The Employer shall retain from each payment due to Contractor the proportion stated in the Contract Data until Completion of the whole of the Works.

48.2 On Completion of the whole of the Works half the total amount retained is repaid to the Contractor and half when the Defects Liability Period has passed and the Engineer has certified that all Defects notified by the Engineer to the Contractor before the end of this period have been corrected.

48.3 On completion of the whole works, the contractor may substitute retention money with an "on demand" Bank guarantee.

In case, Contractor requests for refund of the Retention Money deducted by the Employer under the provision of this clause, Employer shall consider the said request of the Contractor provided that the refund hereunder shall be made in tranches of not less than 1% (One Percent) of the Contract Price and Contractor furnishes an irrevocable and unconditional Bank guarantee for an equal amount substantially in the format of Bank Guarantee for Performance Guarantee enclosed with SBD and valid up to 60 day beyond the scheduled / extended Defects Liability Period. On completion of the whole works, the contractor has however an option to submit a fresh irrevocable and unconditional Bank Guarantee for

an amount equal to 5% of the total value of work executed substantially in the format of Bank Guarantee for Performance Guarantee enclosed with SBD and valid up to 60 days beyond the Defect Liability Period and yet refund the Retention Money Bank Guarantee submitted for refund of Retention Money.

49. Liquidated Damages

- 49.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole works or the milestone as stated in the contract data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payment due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.
- 49.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall not be entitled for any interest on the over payment calculated from the date of payment to the date of repayment.
- 49.3 If the contractor fails to comply with the time for completion as stipulated in the tender, then the contractor shall pay to the employer the relevant sum stated in the Contract Data as Liquidated damages for such default and not as penalty for everyday or part of day which shall elapse between relevant time for completion and the date stated in the taking over certificate of the whole of the works on the relevant section, subject to the limit stated in the contract data.

The employer may, without prejudice to any other method of recovery deduct the amount of such damages from any monies due or to become due to the contractor. The payment or deduction of such damages shall not relieve the contractor from his obligation to complete the works on from any other of his obligations and liabilities under the contract.

- 49.4 If, before the Time for Completion of the whole of the Works or, if applicable any Section, a Taking Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking-Over-Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

50 — Bonus

- ~~50.1 If the contractor achieves completion of the whole of the works prior to the intended Completion Date prescribed in Contract Data the Employer shall pay to the contractor a sum stated in Contract Data as bonus for every~~

~~completed month but subjected to maximum amount as stated in Contract Data; which shall elapse between the date of completion of all items of works as stipulated in the contract, including variations ordered by the Engineer and the time prescribed in Clause 17.~~

- ~~50.2 Bonus shall be paid only to works amounting to above INR 5 crore with time limit of the works is equal or more than 6 months. The bonus would be paid as under~~

% of Time Saved	% of Initial Contract Price entitled for Bonus
50 %	5%
40 %	4%
30 %	3%
20 %	2%
10 %	1%
Less than 10%	0%

~~51. Advance Payment.~~

- ~~51.1 The Employer shall make advance payment (not to be paid less than two installments except in special circumstances for which the reason to be Recorded in writing) to the Contractor of the amounts stated in the Contract Date by the date stated in the Contract Date, against provision by the Contactor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Employer in amounts and currencies equal to be at least 110% of the advance payment. The guarantee shall remain effective until the Advance payment has been repaid, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor. The Mobilization advance would be deemed as interest bearing advance at an interest rate of 10 % to be compounded, quarterly.~~

- ~~51.2 The Contractor is to use the advance payment only to pay for Equipment, plant and Mobilization expenses required specifically for execution of the Works. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the engineer.~~

- ~~51.3 The advance payment shall be repaid by deduction proportionate amount from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, variations, price adjustments, Compensation Events, or Liquidated damages.~~

- ~~51.4 Deleted~~

52. Securities

- 52.1 The performance Security (including additional security for unbalanced bids) shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employer, and denominated in Indian Rupees. The performance Security shall be valid until a date 60 days from the date of expiry of Defects Liability Period and the additional security for unbalanced bids shall be valid until a date 28 days from the date of issue of the certificate of completion.

53. Deleted

54. Cost of Repairs.

- 54.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start date and the end of Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damages arises from the Contractor's acts or omissions.

Signature of Contractor

**Chief Officer
Kheralu Nagarpalika,**

E. FINISHING THE CONTRACT

55. Completion

- 55.1 The Contractor shall request the Engineer to issue a Certificate of Completion of the works and the Engineer will do so upon deciding that the work is completed.

56. Taking Over

- 56.1 The Employer shall take over the Site and the Works within seven days of the Engineer issuing a certificate of Completion.

57. Final Account

- 57.1 The Contractor shall supply to the Engineer a detailed final account of the total amount that the Contractor considers payable as full and final settlement of all claims under the Contract for items before the end of the Defects Liability Period. The Engineer shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Engineer shall decide on the amount payable to the Contractor and issue a payment certificate, within 56 days of receiving the Contractor's revised account.

- 57.2 If reversal in characteristic of tender (L1 becoming L2) on account of excesses and savings in final account is observed, the Engineer/Employer shall be at liberty to restrict the final payment of BOQ items to the lowest amount evaluated of the bids considering the final quantities and the rates quoted including the rebates if any. Payment of variation items shall however be made at the rates approved by the Employer, within 90 days from the physical completion of work.

58. Operating and Maintenance Manuals

- 58.1 If "as built" drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract data.
- 58.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the Contract data, or they do not receive the Engineer's approval, the Engineer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

59. Termination

- 59.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

59.2 Fundamental breaches of Contract include, but shall not be limited to the following:

1. The contractor stops work for 28 days when no stoppage of work is shown on the current programme and the stoppage has not been authorized by the Engineer
2. The Engineer instructs the Contractor to delay the progress of the Works and the instructions is not withdrawn within 28 days;
3. The Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstructions or amalgamation
4. A payment certified by the Engineer is not paid by the Employer to the Contractor within 56 days of the date of the Engineer's certificate
5. The Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;
6. The Contractor does not maintain a security which is required;
7. The Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data; and
8. If the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this paragraph: "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.

59.3 When either party to the Contract gives notice of a breach of contract to the Engineer for a cause other than those listed under Sub Clause 59.2 above, the Engineer shall decide whether the breach is fundamental or not.

59.4 Notwithstanding the above, the employer may terminate the Contract for convenience.

60. Payment upon Termination

60.1 If the Contract is terminated because of a fundamental breach of Contract

by the Contractor, the Engineer shall issue a Certificate for the value of the work done less advance payments received up to the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer.

- 60.2 If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the Engineer shall issue a certificate for the value of the work done, the cost of balance material brought by the contractor and available at site, the reasonable cost of removal of equipment, repatriation of the Contractor's personnel employed solely on the works, and the Contractor's cost of protecting and securing the Works and less advance payment received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to deducted at source as per applicable law.

61. Property

- 61.1 All materials on the Site, Plant Equipment's, Temporary Works and Works are deemed to be property of the Employer, if the Contract is terminated because of a Contractor's default.

62. Release from Performance

- 62.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Employer or the Contractor the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

F. SPECIAL CONDITIONS OF CONTRACT

63. LABOUR

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment of housing, feeding and transport.

The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the site and such other information as the Engineer may require.

64. COMPLIANCE WITH LABOUR REGULATIONS

During continuance of the contract, the Contractor and his sub-contractor shall abide at all times by all existing labour enactments and rules made thereunder, regulations, notification and bye laws of the State or central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notifications that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to the construction industry are given below. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made thereunder, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the Engineer/employer shall have the right to deduct any money due to the Contractor including his amount of performance security. The Employer/Engineer shall also have the right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point to time.

SALIENT FEATURES OF SOME MAJOR LABOUR AND OTHER LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTIONS WORK

- A) **Workmen Compensation Act 1923:-** The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- B) **Payment of Gratuity Act. 1972:-** Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years' service or more on death, the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- C) **Employees P.F. and Miscellaneous Provision Act 1952:-** The Act Provides for monthly contributions by the employer plus workers @ 10% or 8.33% The benefits payable under the Act are :
1. Pension or family pension on retirement or death, as the case may be.
 2. Deposit linked insurance on the death in harness of the worker.
 3. Payment of P.F. accumulation on retirement/death etc.
- D) **Maternity Benefit Act 1951:-** The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.
- E) **Contract Labour (Regulation & Abolition) Act 1970:-** The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer, if they employ 20 or more contract labour.
- F) **Minimum Wages Act 1948:-** The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act, if the employment is a scheduled employment. Construction of Building, Roads, Runways are scheduled employment.
- G) **Payments of wages Act 1936:-** It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- H) **Equal remunerations Act 1979:-** The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against female employees in the matter of transfer, training and promotions etc.
- I) **Payments of Bonus Act 1965:-** The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20 % of wages to employees drawing Rs. 3500/- per month or less. The bonus to be paid to employees getting Rs.2500/- per month or above Rs.3500/- per month shall be worked out by taking wages as Rs.2500/- per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.

- J) **Industrial Disputes Act 1947:-** The Act lays down the machinery and procedure for resolutions of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- K) **Industrial employment (standing Orders) Act 1946:-** It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the State and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.
- L) **Trade Unions Act 1926:-** The Act lays the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have given certain immunities from civil and criminal liabilities.
- M) **Child Labour (Prohibition & Regulation Act 1986:-** The Act prohibits employment of children below 14 years of age in certain occupations and process and provides for regulation of employment of children in all other occupations and processes. Employment of Child labour is prohibited in Building and Construction Industry.
- N) **Inter-State Migrant workmen's (Regulation of Employment & Conditions of service) Act 1979:-** The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The inter-state migrant workmen, is an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home up to the establishment and back, etc.
- O) **The Building and Other Construction workers (Regulation of employment and Conditions of Service) Act 1996 and the Cess Act of 1996:-** All the establishments who carry on any building or other constructions work and employ 10 or more workers are covered under this Act.
All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the government. The Employer of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as canteens, First Aid facilities, Ambulance, Housing accommodations for workers near the workplace etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officers appointed by the Government.
- P) **Factories Act 1948:-** The Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in the manufacturing process.
- Q) **Royalty charges-**The contractor shall pay the royalty to the competent authority as per rule. The **royalty** charges paid shall be borne by the contractor and shall not be

reimbursed by the Employer.

R) Following Pollution control Acts and amendments made thereof from time to time shall be applicable.

1. Water (Preservation and control of Pollution) Act, 1974
2. Air (Prevention and Control of Pollution Act 1981
3. Environmental (Protection) Act 1986

The contractor must commit to adopting Environmental management plan for best energy use, waste management, the reduction of pollution as in EMS (Environmental Management system)ISO-14001- 2015

65. ARBITRATION (GCC Clause 24)

The procedure for arbitration will be as follows: -

- 24.1 If the Contractor is of the view that a decision taken by the Engineer was either outside the authority given to the Engineer by the Contract or that the decision was wrongly taken, the decision shall be referred to **Chief Officer, Kheralu Nagarpalika** (Higher Authority) within

14 days of the notification of the Engineer's decision. If the issue is not resolved, any party can refer the matter for conciliation within 15 days from the decision given by the #Superintending Engineer.

24.2

- (a) For the work up to Rs.100 Cr., if any of the parties is not satisfied with the decision of the **Chief Officer, Kheralu Nagarpalika**, both the parties have to refer to the **Regional municipal commissioner, Gandhinagar** concerned for the conciliation process.

- (b) For the work more than Rs.100 Cr., if any of the parties is not satisfied with the decision of the Superintending Engineer, both parties have to refer to the #Secretary, Wart Resources Department, Government of Gujarat for the conciliation process.

If the dispute is not resolved through the conciliation process, contractor may refer the dispute to Gujarat Public Works Contract Dispute Arbitration Tribunal. If the Contractor fails to refer a claim / dispute to the Higher Authority within 14 days of the notification of the Engineer's decision, the Contractor shall not be entitled to any additional payment/claim if he doesn't follow the above sequence in stipulated time. However, during such period, he would not stop the work in any case.

Signature of Contractor

**Chief Officer
Kheralu Nagarpalika**

SECTION - 4
CONTRACT DATA

#CONTRACT DATA

Item marked "N/A" do not apply to this Contract.

Clause Reference With
respect to section 3

1. The Employers is [CL.1.1]
Name: **Chief Officer, Kheralu Nagarpalika**
Address: **Kheralu.**
Name of authorized Representative (will be intimated later)
2. The Engineer is **Chief Officer, Kheralu Nagarpalika**
Name of Authorized Representative:
3. The Defects Liability Period is **03** years (i.e. **36 Months**) from [CL.1.1&33]
the date of completion.
4. The Start Date shall be 1st days for the date of issue of the Notice [CL.1.1]
to proceed with the work.
5. The Intended Completion Date for the whole of the works is [CL.1.1,17&2]
06 (Six) after start of work with the following milestones:
Milestone dates: [CL.2.2& 49.1]
Physical works to be completed Period from the start date

Milestone 1 i.e.	25 %	45 days.
Milestone 2 i.e.	50 %	90 days.
Milestone 3 i.e.	75%	135 days.
Milestone 4 i.e.	100%	180 days.
6. The Site is located at **Kheralu, Kheralu District.** [CL.1.1]
7. The name and identification number of the Contract is:..... [CL.1.1]
8. The works consist of **as per tender notice** with items as per B.O.Q. [CL.1.1]
The works shall, inter alia, include the following, as Specified or as directed:

(A) Works

As per Tender Notice & Schedule "B".

(B) Road Works :

Site clearance; setting out and layout widening of **existing** carriageway and strengthening including camber corrections; construction of new road/ Parallel service road; bituminous pavements remodeling/construction of Junctions, intersections, bus bays, lay-bays; supplying and placing of drainage Channels, flumes, guard posts and guard other related items; construction/extension of cross drainage works, bridge, approaches and other related stones; protective works for roads/bridge; all aspects of quality assurance of various components of the works; rectification of The defects in the completed works during the Defects Liability Period; submission of "As- built" drawings and any other related documents; and other item of work as may be required to be carried out for completing the work in accordance with the drawings and the provisions of the contract and to ensure safety.

(C) Bridge Works

~~provision of foundations, piers abutments and bearing; prestressed/ reinforced cement concrete superstructure; wearing coat, hand railings, expansion joints, approach slabs, drainages spouts/down take pipes, arrangements for fixing light posts, water mains, utilities etc. provision of suitably designed protective works; providing wing/return walls; provision of road markings, road signs etc ; all aspects of quality assurance; clearing the site and handing over the works on completion; rectification of the defects during the Defects Liability Period and submission of "As-built" drawings and other related documents; and other items of work as may be required to be carried out for completing the works in accordance with the drawings and the provisions of the contract and to insure safety~~

[CL.1.1]

(D) Other Items

Any other items as required to fulfill all contractual obligations as per the Bid documents.

- 10 The following documents also form part of the Contract:

[CL.2.3(9)]

As per clause 2-3

- (i) Bid Document Fee / Tender Fee
- (ii) Bid Security / EMD
- (iii) Registration Certificate of Appropriate Class
- (iv) Registration Certificate if required
- (v) GST Number, Pan Card and EPF Number
- (vi) Work Experience,
- (vii) Other Documents, as required...

11. The law which applies to the Contract is the law of Union of India

[CL.3.1]

12. The language of the Contract documents is English

[CL.3.1]

- ~~13. Limit of sub-contracting 25% of the Initial Contract Price~~

~~[CL.7.1]~~

14. The Schedule of Other Contractors

[CL.8]

15. The Schedule of Key Personnel As per Annex - II to Section I

[CL.9]

16. The minimum insurance cover for physical property, injury and death is Rs.5 lakhs per occurrence with the number of occurrences limited to four. After each occurrence, the contractor will pay an additional premium necessary to make insurance valid for four occurrences always.

[CL13]

17. Site Investigation report

[CL.14]

18. The Site Possession dates shall be From the Date Work order issue.

[CL.21]

19. The period for submission of programme for approval of the engineer shall be 21 days from the issue of Letter of Acceptance.

[CL. 27.1]

20. The period between program updates will be 83 day.

[CL.27.3]

21. The amount to be withheld for late submission of an updated [CL.27.3] programme shall be Rs.0.38 lakhs

22. The following events shall also be Compensation Events

[Cl.44]

Substantially adverse ground conditions encountered during the course of execution of work not provided for in the bidding document.

- (i) Removal of underground utilities detected subsequently
- (ii) Significant changes in classification of soil requiring additional mobilization by the contractor, e.g. ordinary soil to rock excavation,
- (iii) Removal of unsuitable material like marsh, debris dumps, etc. not caused by the contractor.

- (iv) Artesian conditions
- (v) Seepage, erosion landslide
- (vi) River training requiring protection of permanent work
- (vii) Presence of historical, archeological or religious structures, monuments interfering with the works
- (viii) Restriction of access to ground imposed by civil, judicial, or military authority

23. The currency of the Contract is Indian Rupees

[CL. 46]

24. ~~The formula (e) for adjustment of prices are as under:~~

[CL.47]

- ~~If any of the commodities like Cement, Steel or Bitumen are not found applicable in a work, the weight component of that commodities {i.e. 'Cement' (Pc), 'Steel' (Ps) or 'Bitumen' (Pb) as indicated in SBD for the purpose of Price Adjustment} shall be clubbed with the weight component of 'Other Material' (Pm), such that the gross % weight of the components shall remain as 100%.~~

~~R = value of work as defined in Clause 47.1 of Conditions of Contract~~
Adjustment for labour component

- (i) ~~Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance with the following formula:~~

$$V_L = 0.85 \times (P_L/100) \times R \times (L_i - L_0)/L_0$$

~~V_L = Increase or decrease in the cost of work during the month under consideration due to changes in rates for local labour~~

~~L_0 = The consumer price index for industrial workers for the State on 28 days preceding the scheduled date of opening of technical Bids as published by Labour Bureau, Ministry of Labour, Government of India~~

~~L_i = The consumer price index for industrial workers for the State for the month under consideration as published by the Labour Bureau, Ministry of Labour, Government of India.~~

~~P_L = Percentage of labor component of the work.~~

Adjustment for cement component.

- (ii) ~~Prices adjustment for increase or decrease in the cost of cement procured by the contractor~~

$$V_c = 0.85 \times (P_c/100) \times R \times (C_i - C_0)/C_0$$

~~V_c = Increase or decrease in the cost of work during the month under consideration due to changes in rates for cement.~~

~~C_0 = The all India wholesale price index for Ordinary Portland Cement on 28 days preceding the scheduled date of opening of technical bid as published by the Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry.~~

~~C_i = The all India average wholesale price index for Ordinary Portland Cement for the month under consideration as published by Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry.~~

~~P_c = Percentage of cement component of the work~~

~~Adjustment for steel component~~

- (iii) ~~Price adjustment for increase or decrease in the cost of steel procured by the contractor shall be paid in accordance with the following formula~~

$$~~V_s = 0.85 \times (P_s/100) \times R \times (S_i - S_0)/S_0~~$$

~~V_s = Increase or decrease in the cost of work during the month under consideration due to changes in the rates for steel~~

~~S₀ = The all India wholesale price index for steel (Mild Steel - Long Products Rebars) on 28 days preceding the date of opening of Bids as published by the Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry.~~

~~S_i = The all India average wholesale price index for steel (Mild Steel - Long Products Rebars) for the month under consideration as published by Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry.~~

~~P_s = Percentage of steel component of the work~~

~~Note : For the application of this clause, the index of Mild Steel - Long products Rebars has been chosen to represent the steel group.~~

~~Adjustments of bitumen component~~

- (iv) ~~Price adjustment for increase in the cost of bitumen shall be paid in accordance with the following formula~~

$$~~V_b = 0.85 \times (P_b/100) \times R \times (B_i - B_0)/B_0~~$$

~~V_b = Increase or decrease in the cost of work during the month under consideration due to changes in rates for bitumen.~~

~~B₀ = The official retail price of bitumen at the IOC depot at the nearest center on the day 28 days prior to the scheduled date of opening of technical bid.~~

~~B_i = The official retail price of bitumen of IOC depot at the nearest center for the 15th day of the month under consideration.~~

~~P_b = Percentage of bitumen component of the work~~

Adjustment of POL (fuel and lubricant) component

- (v) ~~Price adjustment for increase or decrease in cost of POL (fuel and lubricant) shall be paid in accordance with the following formula~~

$$V_f = 0.85 \times (P_f/100) \times R \times (F_i - F_0)/F_0$$

~~V_f = Increase or decrease in the cost of work during the month under consideration due to changes in rates for fuel and lubricants.~~

~~F_0 = The official retail price of High Speed Diesel (HSD) at the existing consumer pumps of IOC at the nearest centre on the day 28 prior to the date of opening of Bids.~~

~~F_i = The official retail price of HSD at the existing consumer pumps of IOC at the nearest center for the 15th day of the month of the under consideration.~~

~~P_f = Percentage of fuel and lubricants component of the work~~

Note: For the application of this clause, the price of High-Speed diesel Oil has been chosen to represent the fuel and lubricants group.

Adjustment for Construction Machinery

- (vi) ~~Price adjustment for increase or decrease in the cost of plant and Machinery spare procured by the Contractor shall be paid in accordance with the following formula~~

$$V_p = 0.85 \times (P_p/100) \times R \times (P_i - P_0)/P_0$$

~~V_p = Increase or decrease in the cost of work during the month under consideration due to changes in rates for plant and machinery spares~~

~~P_0 = The all India wholesale price index for **manufacturer of machinery for mining, quarrying and Construction** for the month under consideration as published **Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry.**~~

~~P_i = The all India average wholesale price index for **manufacturer of machinery for mining, quarrying and Construction** for the month under consideration as published **Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry.**~~

~~P_p = Percentage of plant and machinery spares component of the work.~~

Note: For the application of this clause, index of Heavy Machinery and parts has been chosen to represent the Plant and Machinery Spares group

Adjustment of other materials Component

- (vii) — ~~Price adjustment for increase or decrease in cost of local materials other than cement, steel, bitumen and POL procured by the contractor shall be paid in accordance with the following formula~~

$$V_m = 0.85 \times (P_m / 100) \times R \times (M_i - M_0) / M_0$$

~~V_m = Increase or decrease in the cost of work during the month under consideration due to change in rates for local materials other than cement, steel, bitumen and POL.~~

~~M_0 = The All India wholesale price index (all commodities) on 28 days preceding the scheduled date of opening of technical Bids, as published by the **Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry.**~~

~~M_i = The All India wholesale price index (all commodities) for the month under consideration as published by the **Office of the Economic Adviser, Department for Promotion of Industry and Internal Trade, Ministry of Commerce & Industry.**~~

~~P_m = Percentage of local material components (other than cement, steel, bitumen and POL) of the work.~~

~~The following percentage will govern the price adjustment for the entire contract:~~

1. Labour - P_l	00.00%
2. Cement - P_c	00.00%
3. Steel - P_s	00.00%
4. Bitumen - P_b	00.00%
5. POL - P_f	00.00%
6. Plant & Machinery Spares P_p	00.00%
7. Other Materials - P_m	00.00%

~~**Total 00.00%**~~

25. The proportion of payments retained (retention money) shall be 6% {CL. 48} from each bill subject to a maximum of 5% of final contract price.
26. Amount of Liquidated damages for delay in completion of works contract
- For Whole of work {CL.49}
(1/2000)th of the Initial price, rounded off to the nearest Thousand, per day. For sectional Completion (wherever specified In item 6 of Contract data) (1/2000)th of initial contract price for #5 km Section, rounded off to the nearest thousand per day.

27. Maximum limit of liquidated damages 10 percent of the Initial {CL.49}
For delay in completion work Contract Price rounded off to
the nearest thousand

28. ~~Amount of Bonus for early completion~~ Amount of bonus for early
~~completion of work shall be~~
~~given as per CL.50 of Section-3~~

29. ~~Maximum limit of bonus for early~~ 5 percent of the Contract {CL.
50} ~~Completion of work~~ Price

30. The amount of the advance payment are: {CL. 51 & 52}

~~#Nature of Advances~~ Amount (Rs.) Conditions to
Be fulfilled

i ~~Mobilization 10% of the contract~~ On submission of
unconditional Price Bank Guarantee. (to be drawn
before the end of 20% of the
contract period). The
contractor may furnish four
bank guarantees of 2.5 % of
each valid for the full period.

ii ~~Equipment 90% for new and 50% of~~ After equipment is brought to
~~depreciated value for~~ site (provided the Engineer is
~~old equipment. Total~~ satisfied That the equipment is
~~amount will be subject~~ required for performance of the
~~to a maximum of 5% of~~ contract) and on submission of
~~the Contract Price~~ unconditional Bank Guarantee
for amount of advance

iii Secured Deleted

~~Advance for Non-persish able~~
~~material Brought to site~~

~~(The advance payment will be paid to the Contractor no later than 28 days~~
~~after fulfillment of the above conditions).~~

31. ~~Repayment of advance payment for mobilization and equipment {CL. 51.3}~~
~~The advance loan shall be repaid with percentage deduction from the interim~~
~~payments certified by the Engineer under the Contract. Deduction shall~~
~~commence in the next Interim Payment Certificate following that in which~~

~~The total of all such payments to the Contractor has reached not less than 20 percent of the Contract Price or 6 (six) months from the date of payment of first installment of advance, whichever period concludes earlier, and shall be made at the rate of 20 percent (collectively for both Mobilization Advance and Equipment Advance) of the amounts of all Interim Payment Certificate until such time as the loan has been repaid, always provided that the loan shall be completely repaid prior to the expiry of the original time for completion pursuant to Clause 17 and 28.~~

32. Deleted
33. The securities shall be for the following minimum amounts equivalent {CL. 52} As a percentage of the Contract Price:
Performance Security for 5 percent of contract price plus Rs. (to be decided after evaluation of the bid) as additional security in terms of ITB Clause 29.5
The standard form of Performance security acceptable to the Employer shall be an unconditional Bank Guarantee of the type as presented in Section 8 of the Bidding Documents.
34. The Schedule of Operating and maintenance Manuals....N/A. {CL. 58}
35. The date by which “as- built” drawings (in scale as directed) in 2 sets {CL. 58} are required within 28 days of the issue of certificate of completion of the whole or section of the work, as the case may be.
36. ~~The amount to be withheld for failing to supply “as built” drawings {CL. 58} by the Date required is Rs- Lakhs.~~
37. The following events shall also be fundamentals breach of contract: {CL.59.2} “The Contractor has contravened Sub- clause 7.1 and Clause 9 of GCC”
38. The percentage to apply the value of the work not completed representing {CL 60} the Employer’s additional cost for completing the Works shall be 20 per cent.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

SECTION - 5
TECHNICAL SPECIFICATION

TECHNICAL SPECIFICATIONS

SPECIFICATION OF PRINCIPAL MATERIALS SPECIFICATION OF PRINCIPAL MATERIALS

The following specifications are only for the principal materials of construction which are included in the details specifications of items and indicated the requirements of qualities of materials. They are given as guide and neither includes all the materials of construction nor exhibits all their desirable qualities. This should be supplemented by detailed specifications as per relevant IS Code unless otherwise not mentioned. The rate of all items are inclusive of all materials inclusive of all lifts and leads for the material unless otherwise specified in detailed specifications.

M-1 WATER:

- 1.1 Water used for mixing and curing of cement / lime mortar or concrete shall not be salty or brackish and shall be clean, reasonably clear and free from objectionable quantities of silt and traces of oil, acid and injurious alkali, salts, organic matter and other deleterious material which will either weaken the mortar or concrete or cause effloresces or attack the steel in R.C.C. Water shall be obtained from sources approved by the Engineer. Sources of water shall be maintained at such a depth and the water shall be withdrawn in such a manner as to exclude silt, mud, grass or other foreign materials. Containers for transport, storage and handling of water shall be clean container for transport, storage and handling of water shall be clean water. Water shall conform to IS: 456:2000 as per necessary test carried out.
- 1.2 Potable water is generally considered satisfactory for mixing and curing mortar or concrete.
- 1.3 Underground water shall be checked before using it in mortar or concrete because of the presence of dissolved salts and chemicals which affect setting time and strength of concrete & mortar.
- 1.4 Sea and sewage water shall not be used.
- 1.5 Water formed satisfactory for mixing shall also suitable for curing concrete and mortar. However water used for curing shall not produce any objectionable stain or unsightly deposit on the concrete or mortar surface. The presence of tannic acid or iron compounds shall objectionable.
- 1.6 Water shall chemically tested at GERI/NSIC Lab/Govt approved Lab., before being used it in mixing and curing in concrete or mortar once for approval of source of supply subsequently only in case of doubt and change in source of supply. The test results shall be as per permissible limit laid in IS: 456-2000.

M-2 CEMENT:

- 2.1 OPC & PPC 53 Grade cement of reputed major cement plant conforming to IS Standard shall be used for entire work under the tender in all respects. Mini plant cement shall not be allowed in any cases.
- 2.2 The contractor shall have to make his own arrangement to procure the cement bearing trade-mark or trade name, Grade of cement, type of cement, Name of manufacturer, Lot No. ISI (BIS) Mark Net weight etc. directly from the manufacturers or authorized dealer. The contractor shall have to make arrangement to load, cart and unload the cement to the site of work at his own cost. For verification of such purchase, the contractor shall have to produce all the original TAX-INVOICE or "RETAIL INVOICE" bearing TIN No. of seller and Buyer, Name of Agency, Name of work site, details of cement (Type and Trade Name), Quantity of cement, Net weight,

separately shown all taxes levied and other details etc. What as applicable as required as per Govt. rules, along with the testing details to the Engineer-in-charge of the work. The sectional officer of the work after verification of TAX-INVOICE or Retail Invoice as detailed above shall accepted the cements and thereafter entry shall be made to stock register from time to time for each receipt of cement and immediately intimate to sectional officer of quality control to take sample for testing of cement. Sectional officer of the work shall have to make entry either in stock register or in cement consumption register detailing date of receipt, Qty. of cement, type of cement, Lot No. trade name and sample taken for testing along with date of sampling.

2.3 TESTING OF CEMENT:

2.3.1 Physical Analysis:

TABLE NO. : 1

Physical Requirements for 53 Grade ordinary Portland cement.

I.S.: 12269 - 2013 (specifications) clause -5 I.S.: 4031-1996 (Methods of physical tests)

Sr.No.	Physical properties	Requirements as per I.S.: 269-2015
1	Fineness (Specific surface area)	Not less than 225 m ² /kg
2	Compressive strength 03 days	Not less than 27 Mpa(N/mm ²)
(a)	(72±1 h)	Not less than 37 Mpa(N/mm ²)
(b)	07 days (168±2 h)	Not less than 53 Mpa(N/mm ²)
(c)	28 days (672±4 h)	
3	Setting time (vicat apparatus)	Not less than 30 minutes
(a)	Initial	Not more than 600 minutes
(b)	Final	
4	Soundness	
(a)	By Le Chatelier method	Not more than 10 mm
(b)	By Autoclave test	Not more than 0.8%
5	Consistency of standard cement paste (standard consistency)	The quantity of water required to produce a paste of standard consistency to be used for determination of water content of mortar for the compressive strength tests and for the determination of soundness and setting time.

2.3.2 Frequency of Sampling and test shall be as below:

The testing of cement shall be done for each lot / consignment received on site. The frequency of the test shall be as under.

TABLE NO.2

Sr. No.	Quantity of Cement	Nos. of sample	Remarks
1.	Up to 50 MT	1	Same lot
2.	51-100 MT.	2	Same lot
3.	101-200 MT.	3	Same lot
4	201-300 MT.	4	Same lot
5	301-500 MT.	5	Same lot
6	501-800 MT.	6	Same lot
7	801-1300 MT.	7	Same lot
8	For each larger consignment.	8	Same lot

2.3.3 Chemical Analysis:

All chemical test required as per IS: 4032-1985 shall be carried out for one test per ten tests sample of above Para 2.31 i.e. for physical tests.

2.4 The cement not satisfying the criteria as per IS: 269-2015 for 53 Grade OPC shall be rejected and contractor shall have to remove it from site immediately.

2.5 Field Test:

The quality of cement shall be confirmed through physical & chemical tests as prescribed in relevant IS in laboratory. These however taken time. However, to quickly ascertain the quality of cement, some field tests of indicative natures as like visual examination (Packing of bags), colour, Texture, initial setting time, Ball test, Float test etc. as described in GERI circular No.1 of 1986 issued vide GERI, Vadodara Letter No.MT-II/Cement/83/21546 of 1986 and 10-3-1986 shall be conducted as guidelines to identify doubtful variety of cement. The doubtful cement when so identified shall be got tested in the laboratory on priority to confirm quality as per IS.

2.6 Large stocks of cement shall not be kept at the work but only sufficient quantity shall be kept to assure continuity of the work. The contractor shall have to provide and maintain efficiently water proof storage sheds for cement on the site of work. It shall be stacked on the platform 30 cm above the floor level and cement shall be covered with tarpaulin or any other impervious materials for covering in order to protect the cement bags from moisture. The tax shall be made at one mt. away from wall and distant between two stacks shall be kept also 1.00 mt. so as to count easy.

2.7 The cement bags shall be neatly stacked in an orderly manner so as to afford easy access and count. Deteriorated cement shall not be allowed for use.

2.8 A regular day to day account of cement received and used on the work together with the particular of the work and quantity of the work in which it was used, shall be maintained in ink separately by the responsible representative of the department and shall be signed at the end of the day's work by the department representative as well as contractor after proper verification in accounting be shown to the inspecting officer when asked for. In addition to above responsible representative of the department shall be maintained the register for consumption of cement as per circular issued vide GOG. ID circular No. CMT/2384/IB-60/25/H Dtd. 30-3-1984.

2.9 The contractor shall provide at the site of work satisfactory storage for not less than 3 months average consumption of cement on work and shall keep the cement store in a manner that will satisfy the Engineer-in-charge.

2.10 The arrangements of storage and utilization of cement shall be such that to ensure the utilizations of cement in the order of its arrival at the stores, the contractor

shall maintain satisfactory up to date records which would at any time show the dates of receipts and proposed utilization of cement lying in the stores at site. Cement shall be used in the "first in first out" method.

- 2.11** The Engineer shall at all times have access to the stores and the site of contractor and shall have authority to check and examine the method of storage, records, accounting and security provided by the contractor. The contractor shall comply with the instruction that may be made by Engineer in this connection. The contractor shall further at all-time satisfy the Engineer on demand by the production of records of books of submission of return and Performa or by other proofs that may be demanded that the cement brought being used for the purpose for which it is brought and contractor shall at all times keep his records up to date of enable Engineer to apply such checks as he may be desire to impose.
- 2.12** The cement shall not be stored for unduly long period. It should be handled in such a way as to impair its strength or useful characteristics.
- 2.13** The Engineer-in-charge or his authorized agent will have the authority to verify the stock and check on the consumption in any manner he thinks proper.
- 2.14** Cement should be measured by weight with MT or Kg as the unit.

2.15 REJECTION

Cement may be rejected if does not comply with any of the requirements described above as per IS code no 269-2015. Cement older than 90 days from the date of manufactured shall not be allowed to use.

M-3 FINE AGGREGATE (SAND)

3.1 General:

All fine aggregate shall confirm to latest norms of I.S. Code : 383:2016 Usage of Sand for the work can be river sand (i.e. sand from the river source) testing and approved from GERI/Govt. Lab. /Govt. Approved Lab. Providing the norms from N.W.R.W.S. & K Department G.R. MIS-102010-17(2) K1 (M I Cell) Date 21/10/2022.

Sand for use in concrete work shall be natural sand; sand shall be clean, well graded, hard, strong, durable and gritty particles free from injurious amount of dust, clay, silt, kankar nodules, soft or flaky particles, shale, alkali, salts, organic matter, loam, mica, or other deleterious substances and shall be approved by the Engineer. The maximum size of particles shall be limited to 4.75mm. 100% Sand should be passed through 10mm IS sieve.

TABLE-3 Limits of Deleterious Materials
(Clause 5.2.1 IS: 383-2016 (Specifications)
IS: 2386 (Part-I, II)-1963 (Method of Testing)

Sr. No.	Deleterious substance and method of test	Fine Aggregate percentage by mass, Maximum (Uncrushed)	Coarse Aggregate percentage by mass, maximum (Crushed)
1.	Coal and lignite IS: 2386 (Part-II) 1963	1.00	1.00
2.	Clay lumps : IS: 2386 (Part-II) 1963	1.00	1.00
3.	Material finer than 75-micron IS sieve IS: 2386	3.00	1.00

	(Part-I) 1963		
4.	Soft fragment. IS: 2386 (Part-II) 1963	-	-
5.	Shale : IS: 2386 (Part-II) 1963	1.00	-
6.	Total of percentage of all deleterious materials (except mica) including Sr.No.1 to 5 for Col.3 and 4	5.00	2.00

TABLE - 4
Gradation of Fine Aggregate
(Clause 6.3 IS: 383-2016)(Specifications)
IS: 2386 (Part-I)-1963 (Method of testing)

Sr. No.	IS Sieve Designation	Percentage(%) passing for			
		Grading Zone-I	Grading Zone-II	Grading Zone-III	Grading Zone-IV.
1.	10mm	100	100	100	100
2.	4,75 mm	90-100	90-100	90-100	95-100
3.	2.36 mm	60-95	75-100	85-100	95-100
4.	1.18 mm	30-70	55-90	75-100	90-100
5.	600 Micron	15-34	35-59	60-79	80-100
6.	300 Micron	5-20	8-30	12-40	15-50
7.	150 Micron	0-10	0-10	0-10	0-15
8.	F.M.	4.00-2.71	3.37-2.11	2.78-1.71	2.25-1.35
9.	F.A. Type	Coarse	Medium	Fine	Very Fine

Note: -

- (1) Grading becomes progressively finer from Zone-I to IV.
- (2) Tolerance : Where the grading falls outside the limit of any (Zone-II & III) grading zone of sieves other than 600 micron IS sieve by a total amount > (Should not be more than) 5%.I.e. Sum of sieve at Sr.No.1, 2, 3,4,6,7 outside (Lower & Upper) the limits of grading Zone-II & Zone-III > 5%.
- (3) The ratio F.A. /C.A. should be reduced progressively.
- (4) Fine aggregate complying with the requirements of any grading zone in above table is suitable for concrete. It is recommended that very fine aggregate conforming Zone-IV should not be used in reinforced cement concrete.

3.2 Quality of Fine Aggregate:

3.2.1 Deleterious Materials : Aggregate shall not contain any harmful material such as pyrites, coal, lignite, mica, shale, or similar laminated material, clay, alkali, soft Fragments sea shells and organic impurities in such quantity as to affect the strength or durability of concrete. Aggregate to be used for reinforced concrete shall not contain any material liable to attack the steel reinforcement. Aggregate which are chemically reactive with alkalis of cement are harmful as cracking may take place.

3.2.2 Limit of Deleterious materials:

The maximum quantity of deleterious material in fine aggregate (natural sand) shall

not exceed the limits specified in Table: 3 of IS: 383-2016.

3.2.3 Grading of Fine Aggregate and Fineness Modulus (F.M.):-

The grading of fine aggregates when determined as described in IS: 2386 (Part-I)-1963 shall be within the limits given in Table: 9 of IS: 383-2016 and shall be described as fine aggregates grading zones I, II, III for concrete work. The sand conforming to zone I, II, III shall only be allow for concrete work. The F.M. of sand shall have ranging between 4.0 and 1.71 ($1.71 < \text{F.M.} < 4.0$) subject to the sand being well graded.

3.2.4 Silt content:

The silt content shall not exceed 3% as per IS: 383-2016 when tested in accordance with IS: 2386 (Part-I) 1963.

The particular of tests, frequency and Acceptance criteria are shown in table below:

T A B L E - 5

Fine Aggregate (Sand)

IS: 2386 (Part-1 to 8), (Test Method) IS: 383-2016 (Specifications)

Sr. No.	Particulars of Tests & IS Code for Method of testing.	Frequency	Acceptance Criteria
1	Gradation & F.M. IS: 2386-(Part-I) 1963.	1-Test per 150 M ³ Concrete work.	(i) For Concrete IS:383- 2016 (ii) For Masonry mortar IS: 2116 1980. (iii) For Plaster IS:1542-1992
2.	Specific Gravity (SPG) & Water absorption, IS:2386 (Part-3) 1963	Once for approval of source of supply subsequently in case of doubt and change in source.	As per relevant specification & design.
3.	Silt content. IS:2386 (Part-I) 1963	1-Test per 150 M ³ Concrete work	Not more than 3%
4.	Alkali Aggregate reactivity IS:2386(Part-7) 1963	Once for approval of source of supply subsequently in case of doubt and change in source.	Relevant specification provision.

3.2.5 Initially before work commenced the entire test as mentioned in above Table-1 shall be carried out at GERI or approved institute or approved private laboratory. The source of sand shall have to specify by contractor and shall be got approved jointly by Engineer-in-charge of work & Q.C.

The gradation of materials from any one source shall not vary in composition beyond the range of value that governs in selecting source of supply. For determining the degree of uniformity, determination of gradation & F.M. shall be made upon representative samples furnished by the contractor from such sources as he propose to use. Fine aggregate from any one source having a variation in F.M. greater than ± 0.20 from the average F.M. of representative sample submitted by the contractor

shall be rejected or may be accepted subject to such change in the proportion of aggregate as the Engineer may direct.

If contractor desires to change of source prior approval of Engineer-in-charge shall have to be got well in advance and Engineer-in-charge shall give approval after satisfaction on additional test carried out.

3.3 Field Test:

Field staff of QC shall have to be carried out tests like gradation, F.M., silt content, at field laboratory at frequency 1 test per 150 m³ concrete work & register for the same shall be maintained at site of work.

3.4 Storage:

The fine aggregate should be stacked carefully on a clean hard surface so that it will not get mixed up with dextrous foreign material.

Sand shall not be stacked in high conical heaps so that segregation of heavier particles by sliding down may be prevented. It shall be placed in layers not thicker than those resulting from lorry loads dumper on the same place.

3.5 Measurement:

When required to be measure, measurement shall be by volume with Cum. as the unit. No deduction shall be made for the voids.

M-4. COARSE AGGREGATE (MACHINE CRUSHED METAL):

Coarse aggregate shall be of machine crushed stone (Machine Crushed metal) of black trap basalt. Coarse aggregate shall be hard, strong, dense, durable, clean of proper gradation and free from skin and coating likely to prevent proper adhesion of mortar or concrete (Adherent coating) and free from veins and free from injurious amount of disintegrator pieces, alkali, vegetable matter and other deleterious substance.

The coarse aggregate shall generally be cubical in shape and as far as possible flaky, elongated, coriaceous pieces shall be avoided. It shall generally comply with the provisions of IS: 383-2016. Aggregate most of which is retained on 4.75 mm IS sieve and containing only so much finer material as is permitted as per IS:383-2016.

4.1 Size of aggregate (Provision in IS: 456-2000):

The nominal maximum size of coarse aggregate should be as far as possible within the limit specified but in no case greater than one fourth (1/4) of the minimum thickness of the member for plain cement concrete and In addition to this for reinforced cement concrete it can be placed without difficulty so as to surround all reinforcement thoroughly and fill the corner of the form. For most work 20 mm aggregate is suitable where there is no restriction to the flow of concrete in to section 40 mm or larger size may be permitted. In concrete element with thin sections, closely space reinforcement or small cover, consideration should be given to the use of 10 mm nominal maximum size.

Read to above para size of aggregate should be determined as follow.

4.11 For plain cement concrete (PCC):

(i) The nominal maximum size of $> 1\frac{1}{4} \times$ Minimum thickness of member Aggregate.

4.12 For reinforced cement concrete (RCC):

(i) The nominal maximum size of $> 1\frac{1}{4} \times$ Minimum thickness of member Aggregate.

✦ The minimum clear distance

Between main bar - 5 mm.

OR

‡ The minimum cover to the
Reinforcement - 5mm.
Whichever is smaller.

4.13 The minimum and maximum size of the aggregates may be between 4.75 mm to 80 mm. (About 3/16" to 3") & shall be well graded.

The range in grading of coarse aggregate shall be as follow.

- (i) 40mm - 80 mm (Or 63mm) (Approximate 1 1/2" to 3" (or 2 1/2"))
- (ii) 20 mm - 40 mm (-do- 0III" (3/4") to 1 1/2"
- (iii) 10 mm - 20 mm (Approximately 0II" (1/2") to 0III" (3/4")
- (iv) 4.75 mm - 10 mm Grit. as available in market.

Engineer-in-charge may give relaxation to range in grading according to availability in market.

4.2 Quality of coarse Aggregate.

4.21 Deleterious materials & its limit;

Deleterious material as described and its acceptance criteria for Machine crushed metal shall be as per IS: 383-2016 when tested according to IS: 2386 (Part-II)-1963, IS: 2386 (Part-I)-1963. In no case total of percentage of all deleterious materials including material finer than 75 micron IS sieve (Silt content) more than 5% by weight i.e. Deleterious material (Coal and lignite, clay, slums) including silt content (3%) shall not be more than 5%.

4.22 Gradation:-

Graded coarse aggregates shall be supplied in the nominal size as per IS: 383-2016 or as per relevant specifications provision.

The particular of tests, frequency and acceptance criteria are shown in Table-6 below.

TABLE-6
Coarse Aggregates (Machine Crushed Metal)
IS: 2386 (Part-1 to 8) if method of test
IS: 383-2016: Specifications.

Sr. No.	Particulars of tests & IS Code for method of Testing.	Frequency	Acceptance Criteria.
1.	Gradation IS:2386(Part-I)-1963	1- Test per 150 M ³ Concrete or as per specification.	As per relevant specification provision.
2.	Sp. Gravity (SPG) & Water absorption (WA) IS:2386(Part-3)-1963	Once for approval of source of supply subsequently in case of doubt and change in source.	SPG generally 2.5 to 3.0 & WA 1.0% to 1.50%.
3.	Flakiness & elongation Indices. IS:2386(Part-I)-1963	- do -	As per design.

4.	Impact value IS:2386(Part-4)-1963	- do -	As per IS:383-2016 (i) Concrete - wearing surface - 30% Max. (Wt.) (ii) Overlaid surface 45%. Max.(Other than (i))
5.	Alkali Aggregate Reactivity. IS:2386(Part-7)-1963	- do -	Relevant specification provision.

Initially before work commenced, kind of test as mentioned in above on discretion power of Engineer-in-Charge shall be carried on function of concrete at GERI or approved institute or approved private laboratory and at the change of source of material again necessary test shall be carried out as per directive of Engineer-in-Charge.

4.3 Field Test:-

The material coming out of the IS: sieve shall be in the grade ranging from 80mm (or 63mm) to 4.75 as specified or as determined as per IS:456-2000 (MSA as specified in specification or as determined as per IS:456-2000). Each grade (80 mm (or 63 mm) - 40 mm, 40 mm - 20 mm, 20mm - 10 mm, 10mm - 4.75mm (Grit) which ever applicable according to MSA shall be stacked separately. The stack shall be considered as approved only if it conforms the following criteria.

- (1). The material retained on IS sieved corresponding to the upper limit of size of stack not exceeding 15% by weight.
 - (2). The material passing through the IS sieve corresponding of the lower limit of size of stack not exceeding 15% by weight.
 - (3). The sum of (1) and (2) above shall not exceed 20% by weight.
- The gradation register shall be maintained at site. The frequency of test shall be 1- test per 150 m³ concrete work.

4.4 Storage:

The aggregate of different sizes shall be stacked or batched or stored separately and handle in such a manner as to prevent inter mixing of different size of aggregates required separately for grading purpose. No foreign materials shall be allowed to be mixed up with aggregates. It shall be covered to prevent mixing of dust etc. They shall be washed clean before use/ the aggregates shall be stacked in one shape of frustum of pyramid of standard size as per code of practice or as directed by Engineer-in-charge.

4.5 Measurement:

When required to be measured the measurement shall be by volume with Cum. as the unit. No deduction shall be made for voids.

Table:-7 Specification of single size Coarse Aggregate (Clause-6.1 IS: 383-2016)

IS sieve Designation	Percentage passing for single size Aggregate					
	MSA 63mm	MSA 40mm	MSA 20mm	MSA 16mm	MSA 12.5mm	MSA 10mm
80 mm	100	-	-	-	-	-
63 mm	85-100	100	-	-	-	-
40 mm	0-30	85-100	100	-	-	-

20 mm	0-5	0-20	85-100	100	-	-
16 mm	-	-	-	85-100	100	-
12.5 mm	-	-	-	-	85-100	100
10 mm	0-5	0-5	0-20	0-30	0-45	85-100
4.75 mm	-	-	0-5	0-5	0-10	0-20
2.36 mm	-	-	-	-	-	0-5

M-5 THERMO MECHANICALLY TREATED (TMT):

The thermo mechanically treated, popularly known as TMT shall conform to IS- 1786. The steel shall be procured by the contractor and grade of steel shall be Fe 415 (minimum). The contractor shall make suitable arrangement for storage of the steel at site. In any circumstances steel produced by re-rolling mills shall not be allowed to use. The steel shall be free from loose mill scale, rust oil, grease, or any other harmful matter. The contractor shall have to procure steel bars directly from manufacturers having BIS certification or its authorized dealer. The contractor shall have to produce original voucher / bill (Retail invoice or Tax Invoice). For the same along with physical and chemical test report whenever asked by engineer in charge for the same.

The mechanical properties of the steel shall be as mention below.

TABLE - A (IS-1786-2008)

STRENGTH GRADE & DESIGNATION	MECHANICAL PROPERTIES			BEND TEST		REBEND TEST	
	YIELD STRESS (YS)	TENSILE STRENGTH (TS)	ELONGATION %, Min, on gauge length 5.65 square root A, Where A is the cross sectional area of the Least piece.	Up to & including 20mm. dia.	Over 20mm. dia.	Up to & including 10mm. dia.	Over 10mm. dia.
	N/mm ²	N/mm ²		☹	☹	☹	☹
1	2	3	4	5	6	7	8
Fe500	500	8 % more than the actual 0.2% Proof Stress/Yield Stress but not less than 545 N/mm ²	12	Mandrel Dia.=4 mm	Mandrel Dia.=5 mm	Mandrel Dia.=7 mm	Mandrel Dia.=8 mm

NOTE: The sample shall be considered to have passed in the bend test if there is no transverse crack in the bent portion. The sample shall be considered to have passed in the re-bend test if there is no fracture in the bent portion.

The chemical composition of the steel shall be as mention below.

TABLE-B (IS-1786-2008)

CONSTITUENT	PERCENTAGE MAXIMUM	As Per IS-1786 2008 Cl. 4.2.1 PERMISSIBLE VARIATION AS FOLLOWS

	Fe 415	Fe 500	Fe550	% max
Carbon	0.3	0.3	0.3	0.02
Sulphur	0.06	0.055	0.055	0.005
Phosphorus	0.06	0.055	0.05	0.005
Sulphur & phosphorus	0.11	0.105	0.1	0.010

TESTING:

Testing of steel shall be done for each size of bars and frequency mentioned below of steel in government or government approved laboratory, to known the physical properties of steel bars, like Nominal mass, 0.2 percentage proof stress/yield stress, Elongation percentage, Tensile strength, Bend and re-bend. The Charges for the same shall be recovered from RA/FINAL BILL of the contractor.

TABLE-E		
FREQUENCY FOR NOMINAL MASS, TENSILE, BEND AND REBEND TESTS		
NOMINAL SIZE IN mm	QUANTITY	
	FOR CASTS / BEATS BELOW 100 TONNES.	FOR CASTS / BEATS OVER 100 TONNES.
Under 10 mm	One sample from each 25 tonnes or part thereof	One sample from each 40 tonnes or part thereof
10 mm to 16 mm inclusive	One sample from each 35 tonnes or part thereof	One sample from each 45 tonnes or part thereof
Over 16 mm	One sample from each 45 tonnes or part thereof	One sample from each 50 tonnes or part thereof

The steel shall be either cold twisted or hot rolled or thermo mechanically treated and shall confirm to IS: 1786. The steel shall be free from loose mill scale, rust oil, grease, or any other harmful matter.

TESTING CHARGES:

The testing charges shall be recovered from RA/FINAL BILL of the contractor as per Section-3 Para No. 34.2 of tender.

MEASUREMENT:

For the purpose of payment, the bar shall be measured correct up to 10mm in length Unit weight of bars shall be computed as per weight given in IS-1786-2008.

Specification for Indian steel or at the rate specified below:

TABLE-D (Table-1, Page-5 of IS-1786)			
BAR DIA.	UNIT WEIGHT	BAR DIA.	UNIT WEIGHT
In mm	Kg / Rmt.	In mm	Kg / Rmt.
6	0.222	28	4.83
8	0.395	32	6.31
10	0.617	36	7.99
12	0.888	40	9.86
16	1.58		

M-6 BINDING WIRE:

The binding wire for tying reinforcement shall be of soft & annealed mild steel confirming to IS-280. The diameter of wire shall be of 1.63 mm or 1.22mm (16 or 18 gauge). The use of black wire shall be permitted for binding reinforcement bars, it shall be free from rust, oil paint, grease, loose mill scale or any other undesirable coating which may prevent adhesion of cement mortar.

M-8 SYNTHETIC ENAMAL PAINT:

The material shall be based on synthetic alkyd resin, free from natural resins and their derivatives or their modifications in any form. The paint shall be of standard manufacturing company and approved by engineer in charge and shall confirm to IS-120. In case of big job/dispute, paint shall be tested in govt. approved laboratory at the cost of contractor. The contractor shall have to provide metallic test plate of size 300x200x2mm. The shade of the paint shall be as approved, and shall remain uniform for throughout the work. The paint shall not show curding levering, caking or colour separation and shall be free from lumps and skins. Paint shall not show excessive setting. The paint shall brush easily, possess good leveling properties and show no running or sagging tendencies.

M-9 RED OXIDE PRIMER:

The Red oxide primer shall be of standard manufacturing company and approved by Engineer in charge. In case of big job/dispute, primer shall be tested in govt. approved laboratory. The testing charge of the same shall be recovered from RA/FINAL BILL of the contractor. The red oxide primer shall confirm to I.S.-35-1975. The contractor shall have to provide metallic test plate of size 300x200x2mm

M-11. Cement Mortar

11.1. Water shall conform to specification M-1, Cement shall conform to specifications M-2 and Sand shall conform to M-3

11.2. Proportion of Mix

11.2.1. Cement and sand shall be mixed to specified proportion, sand being measured by measuring boxes, the proportion of cement will be by volume on the basis of 50 Kg/Bag of cement being equal to 0.0342 Cum. The mortar may be hand mixed or machine mixed as directed.

11.3. Proportion of Mortar:

11.3.1. In hand mixed mortar, cement and sand in the specified proportions shall be thoroughly mixed dry on a clean impervious platform by turning over at least 3 times or more till a homogeneous mixture of uniform colour is obtained. Mixing platform shall be so arranged that no deleterious extraneous material shall get mixed with mortar or mortar shall flow out. While mixing, the water shall be gradually added and thoroughly mixed to form a stiff plastic mass of uniform colour so that each particle of sand shall be completely covered with a film of wet cement. The water cement ratio shall be adopted as directed.

11.3.2. The mortar so prepared shall be used within 30 minutes of adding water. Only such quantity of mortar shall be prepared as can be used within 30 minutes

M-15. Bricks

15.1. The bricks shall be hand or machine molded and made from suitable soils and kiln burnt. They shall be free from cracks and flaws and nodules of free lime. They shall have smooth rectangular faces with sharp corners and shall be of uniform colour. The bricks shall be moulded with a frog of 100 mm. x 40 mm. and 10 mm. to 20 mm. deep on one of its flat sides. The bricks shall not break when thrown on the ground from a height of 600 mm.

15.2. The size of modular bricks shall be 190 mm. x 90 mm. x 90 mm.

15.3. The size of the conventional bricks shall be as under: (9" x 4.3/8" x 2,3/4") 225 x 110 x 75 mm.

15.4. Only bricks of one standard size shall be used on one work. The following tolerances shall be permitted in the conventional size adopted in a particular work.

Length $\pm 1/8"$ (3.0 mm.) Width $\pm 1/16"$ (1.50 mm.) Height $\pm 1/16"$ (1.50 mm.)

15.5. The crushing strength of the bricks shall not be less than 35 Kg/Sq.Cm. The average water absorption shall not be more than 20 percent by weight. Necessary tests for crushing strength and water absorption etc. shall be carried out as per I.S. 3495 (Part-I to IV)-1976

M-22. Structural Steel

22.1. All structural Steel shall conform to I.S. 226-1985: The steel shall be free from the defects mentioned in I.S. 226-1975 and shall have a smooth finish. The material shall be free from loose mill scale, rust pits or other defects affecting the strength and durability. River bars shall conform to I.S. 1148-1973.

22.2. When the steel is supplied by the Contractor test certificate of the manufacturers shall be obtained according to I.S. 226-1975 and other relevant Indian Standards.

M-23. Galvanized Iron Sheets

23.1. The galvanized iron sheets shall be plain or corrugated sheets of gauges as specified in item The G.I. Sheets shall conform to I.S.277-1977. The sheets shall be undamaged in carnage and handling either by rubbing off of zinc coating or otherwise. They shall have clean and bright surface and shall be free from dents, bends, holes, rust or white powdery deposit.

23.2. The length and width of G.I. sheets shall be as directed as per site condition.

M-23.A: G.I. Valleys gutter, ridges

23.A.1. The G.I. ridges and hips shall be of plain galvanized sheets Class - 3 of the thickness as specified in item. These shall be 600 mm. in width and properly bent up to shape without damage to the sheets in process of bending.

23.A.2. Valleys gutters and flashings shall also be of galvanized sheet of thickness as specified in item Valleys Shall be 900 mm. wide overall and flashing shall be 380 mm. wide overall they shall be bent to the required shape without damage to the sheet in the process of bending.

M-26. Shuttering

26.1. The shuttering shall be either of wooden planking of 30 mm. minimum thickness with or without steel lining or of steel plates stiffened by steel angles. The shuttering shall be supported on battens and beams and props of vertical bullies properly cross braced together so as to make the centering rigid. In places of bullies props, brick pillar of adequate section built in mud mortar may be used.

26.2. The form work shall be sufficiently strong and shall have camber so that it assumes correct shape after deposition of the concrete and shall be able to resist forces caused by vibration of live load of men working over it and other incidental loads associated with it. The shuttering shall have smooth and even surface and its joints shall permit leakage of cement grout.

26.3. If at any stage of work during or after placing concrete in the structure, the form work sags or bulges out beyond the required shape of the structure, the concrete shall be removed and work redone with fresh concrete and adequately rigid form work. The complete form work shall be got inspected by and got approved from the Engineer-in-charge, before the reinforcement bars are placed in position.

26.4. The props shall consist of bullies having 100 mm. minimum diameter measured at mid length and 80 mm. at thin end shall be placed as per design requirement. These shall rest squarely on wooden sole plates 40 mm. thick and minimum bearing area of 0.10 sq.m laid on sufficiently hard base.

26.5. Double wedges shall further be provided between the sole plate and the wooden props so as to facilitate tightening and easing of shuttering without jerking the concrete.

26.6. The timber used in shuttering shall not be so dry as to absorb water from concrete and swell or bulge nor so green or wet as to shrink after erection. The timber shall be properly sawn and planed on the sides and the surface coming in contact with concrete. Wooden form work with metal sheet lining or steel plates stiffened by steel angles shall be permitted.

26.7. As far as practicable, clamps shall be used to hold the forms together and use of nails and spikes avoided.

26.8. The surface of timber shuttering that would come in contact with concrete shall be well wetted and coated with soap solution before the concreting is done. Alternatively coat of raw linseed oil or oil of approved manufacture may be applied in place of soap solution. In case of steel shuttering either soap solution or raw linseed oil shall be applied after thoroughly cleaning the surface. Under no circumstances black or burnt oil shall be permitted.

26.9. The shuttering for beams and slabs shall have camber of 4 mm per meter (1 in 250) or as directed by the Engineer-in-charge so as to offset the subsequent deflection. For cantilevers, the camber at free end shall be 1/50 of the projected length or as directed by the Engineer-in-charge.

M-31. Aluminum doors, windows, ventilators

31.1. Aluminum alloy used in the manufacture of extruded window sections shall conform to I.S. designation HEAWP of I.S. 733-1975 and also to I.S. Designation WVG-WP of I.S. 1285-1975. The section shall be as specified in the drawing and design. The fabrication shall be done as directed.

31.2. The hinges shall be cast or extruded aluminum hinges of same type as in window but of larger size.

31.3. The hinges shall normally be of 50 mm. projecting type. Non-projecting type of hinges may also be used if directed. The handles of door shall be of specified design. A suitable lock for the door Operable either from outside or inside shall be provided. In double shutter door, the first closing shutter shall have concealed aluminum alloy bolt at top and bottom. Note:- Aluminum doors, windows, ventilators shall be provided with I.S.I Mark.

So not detailed testing required.

M-33. Collapsible Steel Gate

33.1. The collapsible steel gate shall be in one or two leaves and size as per approved drawings or as specified. The gate shall be fabricated from best quality mild steel channels, flats etc. Either steel pulleys or ball-bearings shall be provided in every double channel. Unless otherwise specified the particulars of collapsible gate shall be as under.

- (a) Pickets: These shall be of 20 mm. M.S. channels of heavy sections unless otherwise shown on drawings. The distance center to center of pickets shall be 12 cms. with an opening or 10 Cms.
- (b) Pivoted M.S. flats shall be 20 mm x 6 mm.
- (c) Top and bottom guides shall be from tee of flat iron of approved size.
- (d) The fittings like stoppers, fixing, locking cleats, brass handles and cast iron rollers shall be of approved design and size.

M-44. Paints:

44.1. (A) Oil paints :

44.1.1. Oil paints shall be of the specified colour and as approved the ready mixed paints shall only be used. However, if ready mixed paint of specified shade or tint is not available white ready mixed paint with approved stainer will be allowed in such a case the contractor

shall ensure that the shade of the paint so allowed shall be uniform.

44.1.2. All the paints shall meet with the following general requirements

- (i) Paint shall not show excessive setting in a freshly opened full can and shall easily be ready spread with a paddle to a smooth homogeneous state. The paint shall show no curdling, levering caking or colour separation and shall be free from lumps and skins
- (ii) The paint as received shall brush easily, possess good leveling properties and show no running or sagging tendencies
- (iii) The paint shall not skin within 48 hours in a three quarters filled closed container
- (iv) The paint shall dry to a smooth uniform finish free from roughness, grit unevenness and other imperfections

44.1.3. Ready mixed paint shall be used exactly as received from the manufacturers and generally according to their instructions and without any admixtures whatsoever

44.2. (B) Enamel paints:

44.2.1. The enamel paint shall satisfy in general requirements in specification of oil paints, Enamel paint.

Note:- Paints (All Type paints) shall be of Standard Branded and provided with I.S.I Mark. So not required detailed testing required.

M-45. French Polish

45.1. The French polish of required tint and shade shall be prepared with the below mentioned ingredients and other necessary materials:

- (i) Denatured spirit of approved quality (ii) Chandras (iii) Pigment.

M-48. Rough Kotah Stone

48.1. The Kotah stones shall be hard even, sound, and regular in shape and generally uniform in colour. The colour of the stone shall generally be green Brown coloured shall not be allowed for use They shall be without any soft veins, cracks or flaws.

48.2. The size of the stones to be used for flooring shall be of size 600 mm x 600 mm and/or size 600 mm. x 450 mm as directed However smaller sizes will be allowed to be used to the extent of maintaining required pattern. Thickness shall be as specified

48.3. The edges of minus 30 mm on accounts of chisel dressing of edges shall be permitted for length as well as breadth. Tolerance in thickness shall be + 3 mm

48.4. The edges of stones shall be truly chiseled and table rubbed with coarse sand before paving. All angles and edges of the stones shall be true, square and free from chipping and surface shall be true and plain

48.5. When machine cut edges are specified, the exposed and the edges at joints shall be machine cut The thickness of the exposed machine cut edges shall be uniform

M-49. Polished Kotah Stone

49.1. Polished kotah stone shall have the same specification as per rough kotah stone except as mentioned below

49.2. The stones shall have machine polished surface. When brought on site, the stones shall be single polished or double polished depending upon its use. The stones for paving shall generally be single polished The stones to be used for dado, skirting, sink, veneering, sills steps etc. where machine polishing after the stones are fixed in situ is not possible shall be double polished.

M-56. Galvanized iron pipes and fittings

56.1. Galvanized iron pipes shall be of the medium type and of required diameter and shall comply with I.S. 1239- 1979. The specified diameter of the pipes shall refer to the inside diameter of the bore. Clamps, screw and all galvanized iron fittings shall be of the standard

' R ' or equivalent make.

M-77. Selected Earth

77.1. The selected earth shall be that obtained from excavated material or shall have to be brought from outside as indicated in the items. If item does not indicate anything the selected earth shall have to be brought from outside.

77.2. The selected earth shall be good yellow soil and shall be got approved from the Engineer-in-charge. In no case black cotton soil or similar expansive and shrinkable soil shall be used. It shall be clean and free from all rubbish and perishable materials, stones or brick bats. The clods shall be broken to a size of 50 mm or less. Contractor shall make his own arrangement at his own cost for land for borrowing selected earth. The stacking of material shall be done as directed by the Engineer-in-charge in such a way not to interfere with any construction all activities and in proper stacks.

77.3. When excavated material is to be used only selected stuff got approved from the Engineer-in-charge shall be used. It shall be stacked separately and shall, comply with all the requirements of selected earth mentioned above

M-78. Barbed Wire

78.1. The barbed wire shall be of galvanized steel as per standard quality. The barbed wire shall be of types-I whose nominal diameter for line wire shall be 2.5 mm. and point wire 2.4 mm. The nominal distance between two barbs shall be 75 mm unless otherwise specified in the item. The barbed wire shall be formed by twisting together two fine wires. One containing the barbs. The size of the line and point wires and barb spacing shall be as specified above. The permissible deviation from the nominal diameter of the line wire and point wire shall not exceed ± 0.08 mm

78.2. The barbs shall carry four points and shall be formed by twisting two point wires, each two turns tightly round one line wire making altogether four complete turns. The barbs shall have a length of not less than 13 mm and not more than 18 mm. The point shall be sharp and cut at an angle not greater than 35 degree of the axis of the wire forming the barbs.

78.3. The line and point wires shall be circular in section, free from scale and other defects and shall be uniformly galvanized. The line wire shall be in continuous length and shall not contain any welds other than those in the rod before it is drawn. The distance between two successive splices shall not be less than 15 meters.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

: SPECIFICATIONS OF MATERIALS FOR ELECTRICAL WORK:

1.0 Wiring Rules:

The installation generally shall be carried out in conformity with relevant Indian Standard Specifications and code of practices prevalent. Indian Electricity Rule 1956 and Indian Electricity Act 1910 as amended from time to time.

2.0 Conductors:

All conductors unless otherwise specified shall not be less than 1.5 Sq. mm. for point wiring and 2.5 Sq. mm. for mains conductors for power and lighting. Circuits shall be of adequate size to carry the designed circuit load without exceeding permissible thermal limits for the installation and such sizes will be stipulated in specifications and or drawings.

3.0 Cables:

3.1 All cables shall conform to relevant Indian Standard.

3.2 Conductors of all cable except the flexible cable shall be of aluminum. The smallest aluminum conductors for the final circuit shall have nominal cross section area of not less than 1.5 Sq. mm. The minimum size of the aluminum conductors for power wiring shall be 4 Sq. mm.

3.3.1 Conductors of flexible cables shall be of copper. The minimum cross sectional area of such a cables shall be 14.0193 mm. The flexible cable shall have uniform and adequate insulation.

3.3.2 Unless the flexible cable and conductors are protected by amour or through rubber or PVC Sheath, these shall not be used in workshops and other places where they are liable to mechanical damage.

3.3.3 Core flexible cable shall be used for connecting single phase appliances for phase, neutral and earth connections.

4.0 Rating of lamps:

4.1 Incandescent lamps installed in residential and non-residential building shall be rated at 60 watts and 100 watts respectively.

4.2 5 Amp. socket outlet points and 15 Amp. sockets outlet points shall be rated at 100 watts and 1000 watts respectively for the purpose of load assessment unless value of the load are known or specified.

5.0 Polarity Test:

In a two wire installation a test shall be made to verity that all switches in every circuit have been fitted in the same conductor throughout and such conductor shall be labeled or marked for connection to the phase conductor or to the non-earthed conductor of the supply.

6.0 Switches:

6.1 All switches (other than those of iron clad pattern) carrying current of 10 Amp. and above shall be fitted for back connection and shall be suitably protected.

6.2 All switches and circuit breakers shall be constructed in accordance with the I.S. 4237-1967. General requirement of switch gear and control gear for voltage not exceeding 1000 volts and other relevant I.S. provided also the spring shall be either of phosphor bronze or steel shall be copper or Nickel plated and that handle shall be so fastened bronze or if steel shall be copper or Nickel plated and that handle shall be so fastened that they do not tend to unscrew or become loose.

6.3 All main switches shall be either of metal clad enclosed pattern or of any insulated

- enclosed pattern, which shall be fixed at close proximity to the point of entry of supply.
- 6.4** Switch boards shall be erected above gas, stoves or sinks or within 2.5 m. of any washing unit in the washing rooms of laundries or in the bath rooms, lavatories, toilet or kitchens.
- 6.5** A switch board not be installed so that its bottom is within 1.25 m. above the floor unless the front of the switch board is completely enclosed by a door or the switch board is located in a position to which only authorized persons have access.
- 7.0 Switch board and Distribution board:**
- 7.1** For small installations connected to a single phase 230 volts supply teak wood boards may be caused as main boards or sub boards. These shall be of seasoned teak or other durable wood with solid back impregnated with varnish of approved quality with all joints dovetailed.
- 7.2** In writing a branch board, total load of the consuming devices shall be divided, as far as possible, evenly between the number of ways of the boards leaving the spare circuit for future extension.
- 8.0 Passing through walls and floors:**
- 8.1** Where conductors pass through walls one of the following methods shall be employed. Care shall be taken to see that wires pass very freely through protective pipe of box and that the wires pass through in a straight line without any twist or cross in wires, on either ends of such holes.
- (a) A teak wood box intending through whole thickness of the wall shall be buried in the wall and casings or conductors shall be carried so as to allow 1.3 cms. Air space on three sides of the casing conductor.
- (b) he conductor shall be carried either in a rigid steel conduit conforming to I.S. 1653-1964 specification for Rigid steel conduits of electrical wiring (Revised) or a rigid nonmetallic conduit conforming to I.S. 2509-1963 specification for Rigid nonmetallic conduits for Electrical installations, or in a porcelain tube of such size which permits easy drawing in the end of conduit shall be neatly bushed with porcelain wood or other approved material.
- (c) Insulated conductor while passing through floors shall be protected from mechanical injury by means of rigid steel conduits (See I.S. 1653-1964) to height not less than 1.5 mt. above the floors and flush with the ceiling below. The steel conduit shall be earthen and securely bushed.
- 8.2** Where a wall tube passes outside a building so as to be exposed to weather, to outer end shall be belt mounted and turned down wards and properly bushed on the open end.
- 9.0 Lamp Holders:**
- Lamp holder for use on brackets and the like shall be in accordance with I.S. 1258-1967 specification of Bayonet lamp holder and all those for use flexible pennants shall be provided with cord grips. All lamp holders shall be provided with shade carried. Where center contacted-son screw lamp holders are used, the outer or screw contacts shall be connected to the middle wire, the neutral, and the earthed conductor of the circuit.
- 10.0 Outer Lamp:**
- External and road lamps shall have weather proof fittings of approved design so as to effectively prevent the admission of moisture. An insulating distance piece of

moisture proof materials shall be inserted in the fittings. Flexible cord and grip lamp holders shall not be used where exposed to weather. In verandahs and similar exposed situations where pendants are used, they shall be of fixed rod type.

11.0 Lamps:

All incandescent lamps, unless otherwise required and suitably protected, shall be hung at a height of not less than 2.5 m. above the floor level. They shall be in accordance with I.S. 418-1957 specification for Tungsten Filament General Service Electric lamps.

12.0 P.V.C. insulated P.V.C. sheathed or T.R.S. wiring system:

12.1 General:-

This system of wiring is suitable for low pressure installation and shall not be used in places exposed to sun and rain nor in damp places, provided they are sheathed in the special approved protective covering and well protected to withstand dampness.

12.2 Attachment to walls and ceiling:

12.2.1 All cables on Brick walls, stone or plastered walls ceiling shall be run on well-seasoned, perfectly straight and well varnished on four sides. Teak wood or any approved hardwood battens, prior to erection. These shall be painted with one coat of varnish or approved paint of colour to match with surrounding. These battens shall be secured to wall and ceilings by flat head wood screws to raws plug or Phil plug at an interval not exceeding 75 cm. Wood plug can be used only with special approval of the Engineer-in-charge. The flat head wood screws shall be counter within wood batten and smoothed down with file.

12.2.2 Where wiring is to be carried out along the face of the rolled steel joints a wooden battens of adequate width shall first be laid on the same dipped to it as inconspicuously as possible. The wiring should then be fixed to this backing in the ordinary way, where wiring passes through structural steel work. The hole shall be suitably bushed to prevent the abrasion of the cables.

Note:- All Electrical Items shall be of Standard Branded and provided with ISI Mark. (No detailed testing required for item of standard company with ISI mark)

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

GENERAL SPECIFICATIONS FOR CONCRETE WORK

SCOPE OF WORK:

The work covered by this chapter consists of furnishing all materials , equipment and labour for manufacture, transport, placing , finishing and curing of concrete in the structure included in these specifications and performing all the functions necessary for and ancillary to the work.

The item of concrete will have to be split up into several items according to the grade of concrete to be used and its location and will be measured and paid accordingly. The general specifications described hereinafter shall, however, in relevance apply to all the concrete items.

MATERIALS:

As per Specification of Principal Material

Water shall confirm to specification M-1

Cement shall confirm to specification M-2

Fine Aggregate (Sand) shall confirm to specification M-3

Coarse Aggregate (Machine Crushed Metal) shall confirm to specification M-4

COMPOSITION:

Concrete shall be composed of cement, fine aggregate (natural sand) coarse crushed aggregates and water, all well mixed in proper proportion and brought to the proper consistency. Whenever so ordered by the Engineer, admixtures shall be added as stated in the special conditions. The exact proportions of each type of aggregate will be determined and adjusted from time to time on the mechanical analysis of the aggregates stock piles, and tests of resulting concrete test cubes. In general, the design mix proportion shall be adjusted to produce a durable, plastic and workable concrete, suitable for the specific condition of placement and design strength as specified in each case.

The specifications for the cement, fine and coarse aggregates and water shall be strictly adhered to as directed.

CLASSIFICATION:

For all items of concrete in any portion of the structure or its associated works, shall be of design mix as specified in specification of item or as decided by engineer in charge as per provision made in IS-456-2000 Page No-23 cluse-9.3. The cement concrete work to be carried out are classified in grades as mention in item of work. Following table is provided for general guidance to the contractor. There may be change in criteria like water cement ratio, slump, aggregate size and proportion etc., for which contractor is bound to carryout work without claiming any extra cost. The cement level mention in the Table:- AA, given below are tentative and for general guidance only.

The design mix for different grade of concrete to be used will be furnished by the department.

TABLE-AA

Sr No.	Grade of concrete	MSA	Min. Comp. Strength at field on 15x15x15 cms cube	Min Comp Strength at Lab. On 15x15x15 cms. Preliminary test cube	Min cement level Req. as per IS PCC/RCC	Cement level consider in the rate PCC/RCC	W/C Ratio PCC/RCC	Remarks
1.	2.	3.	4.	5.	6.	7.	8.	9.
1.	M-10	mm	Kg/cm ² at 28 days	Kg/cm ² at 28 days	Kg/cum	Kg/cum		
		20	133	161	Not Available	220	0.60	
		40	133	161	Not Available	205	0.60	For P.C.C Mild exposure condition
		80	133	161	Not Available	190	0.60	
						---	---	
2.	M-15	20	184	212	240	300	0.6	For P.C.C Moderate exposure condition
					N.A	300	N.A	
		40	184	212	210	280	0.6	
					N.A	280	N.A	
		80	184	212	N.A	240	0.6	
3.	M-20				N.A	240	N.A	For PCC severe to very severe & for R.C.C. mild exposure condition
		20	245	272	250	--	0.50	
					300	360	0.55	
		40	245	272	220	--	0.50	
					270	330	0.55	
4.	M-25				N.A	--	--	For PCC Extreme & for R.C.C. moderate exposure condition
		20	296	323	280	--	0.4	
					300	380	0.5	
		40	296	323	250	--	0.4	
					270	360	0.5	
5.	M-30	80	296	323	N.A	--	--	For RCC Sever exposure condition
					N.A	340	--	
		20	357	390	--	--	-	
					320	410	0.45	
		40	357	390	--	--	-	
					290	382	0.45	
		80	357	390	--	--	--	
					N.A	350	-	

NOTES:

- Concrete works classified as above shall be designed with reference to the field strength shown in above table. Other requirements shall have to be adjusted to obtain this strength in each case incl. cement level. Indicated in above table
- Compressive strength mention in column no-3 is based on characteristic compressive strength compliance requirement given on table-11 page no-30 of IS-456-2000. And it is the average characteristic compressive strength of three specimens.
- Compressive strength mentioned in column no-5 is based on para-9.2.2 (page no-22) of IS-456-2000 (The target mean strength of concrete Mix should be equal to the characteristic strength plus 1.65 times the std. deviation.). Standard. Deviation of 3.5 is taken for M-10 & M-15, 4.0 is for M-20 & M-25, and 5.0 is for M-30 as per IS-456, Page-23, Table-8

- 4 The test result of the sample shall be the average of the strength of three specimens. The individual variation should not be more than (+) or (-) 15 percentage of the average.
- 5 The characteristic strength compliance requirement mentioned in column No-3 and target mean strength mentioned in above para-3 are based on 'GOOD QUALITY CONTROL'.
- 6 For every one kg of cement required to be reduced than that of stated in column No-7 of Table-AA in each case based on approved laboratory design mix/nominal mix, the recovery shall be made at **Rs.5.45 + Applicable G.S.T. Per kg.** of cement. And for every one kg of cement required to be added than that of stated in column No-7 of Table-AA, in each case based on approved laboratory design mix/nominal mix, NO EXTRA payment shall be made.
- 7 Curing period shall be 14 days (min.) for Concrete.
- 8 Above details are primarily given for the guidance of contractor while quoting there tender rate and is only informative for the general requirement of concrete. While at the time of execution, Concrete mix design of stipulated or designated grades of concrete shall be carried out at nearest GERI laboratory Or Govt. laboratory or Govt. approved private laboratory.

Acceptance Criteria:

- (i) Compressive strength: The concrete shall be deemed to comply with the strength requirements when both the following condition are mate
- (a) The mean strength determined from any group of four consecutive test result comply with appropriate limits in Col.2 of Table-11 Given on pg. no, 30 of IS: 456-2000
- (b) Any individual test result comply with appropriate limit in column 3 of table-11 given on pg. no.30 of IS: 456-2000

Design Mix Concrete

The design mix shall be design to produce the grade of concrete having the required workability and characteristic strength and target mean strength not less than appropriate values given in Table-AA column-4 & 5 respectively. Mix design done earlier not prior to one year or one season change (whichever is less) may be considered adequate for later work provided there is no change in source of quality of materials. The design mix shall be carried out in Govt. Laboratory or (GERI) or Govt. Approved Private Laboratory as per IS-10262.

Forms for concrete IS-457 shall be applied

Sampling & Strength of Designed Concrete Mix/Nominal Mix (Provision of IS:457-1957)

General:

Sample from fresh concrete shall be taken as per IS:1199 and cubes shall be made, cured and tested at 7 days and 28 days in accordance with IS:516.

Sampling Procedure: A random sample procedure shall be adopted.

Frequency: (IS: 457-1957) the minimum frequency of sampling of concrete of each grade for compressive strength shall be in accordance with the following

	Quantity of concrete in the work, m ³	Numbers of samples.
(i)	Approximately each 380 m ³ of mass plain cement concrete	1 sample for 7 days and 1 sample for 28 days per shift per mixing unit per day.
(ii)	Approximately each 190 m ³ of mass reinforced cement concrete.	-----do-----

Test Specimen

Three test specimen shall be made for each sample for testing at 7 days and 28 days.

Test Result of Sample

The test result of sample shall be the average of the strength of three specimen the individual variation should not be more than $\pm 15\%$ of the average. If more the test result of the sample are invalid.

Slump test

Slump test at field shall be carried out frequency of sampling for compressive strength cube.

Acceptance criteria for concrete grade: (Compressive strength) (IS: 456-2000)

If the concrete is deemed not to comply pursuant to above criteria action needed as per IS 456- 2000 shall be taken. Other not specified matters shall be considered as per IS 456-2000. The concrete shall be deemed to comply with the strength requirement when the following condition are met.

Inspection of Foundation before Concrete Placement:

Following care shall be taken for rock surface, soil surface & concrete surface.

Rock surface:

- Check lines & levels.
- Inspect with hammer for hollow sound.
- Remove loose rock.
- Clean with air and water jets under pressure.
- Keep surface wet for wet for 24 hrs before placement of concrete.
- Ensure adequate drainage or dewatering or caulking for leaks.

Soil Surface:

- Remove loose or soft patches.
- Moisture the surface to a depth of about 15 cm for 24 hrs before placement of concrete.
- Do tamping or rolling.

Concrete Surface:

- Remove loose material.
- Existing concrete should be wet sand blasted & washed thoroughly.
- Completely dried immediately prior to placement.

BATCHING AND MIXING EQUIPMENTS:

All ingredients of the concrete should be used by mass only except water. Batching shall be done either by automatic computerized/electronic weigh batcher or by mechanical weigh batcher attached with concrete mixer or Weighing scale. The equipment and its operation shall at all times be subject to the approval of the engineer in charge. Calibration of weigh batching shall be done periodically. Steel measuring boxes of adjustable bottom shall only be allowed in special circumstances, for very small quantity of concrete and subjected to prior written permission of engineer in charge. Calibration of mechanical weigh batcher attached with concrete mixer (Ajax) shall be carried out prior to use it. Any other requirement for better batching may be required as per site shall have to be arranged by contractor as per instruction of Engineer-in-charge.

17.0) MIXING:

Specification laid down in IS-457 shall be applicable. The mixing of concrete shall be done in a batch mixer/mechanical mixer of such approved type as will ensure the homogeneous mixing of ingredients. The ingredients shall be fed into the mixer

simultaneously. A small portion (5 to 10%) of water be fed first and remaining water shall be added uniformly and simultaneously when all other materials are in the mixer. Mixing time shall be generally 2 minutes or as instructed by the engineer in charge.

HANDLING AND CONVEYING:

Specification laid down in IS-457 shall be applicable. The handling and conveying of concrete from the mixer to the place of final deposit shall be done as rapidly as practicable and without any objectionable separation or loss of ingredients. Whenever the length of haul from the mixing plant to the place of deposit is such that the concrete unduly compacted or segregates, suitable agitator's type conveying system shall be used. Where, concrete is being conveyed on chutes or on belts, the free fall or drop shall be limited to 1.50mt unless otherwise permitted. Concrete shall be placed within 30 minutes after mixing and by method which will prevent segregation and loss of ingredients. The distance between the mixer and place of concreting and also mode of transport of concrete shall be subject to the prior approval

FORMS FOR CONCRETE: IS: 457 shall be applicable.

i) GENERAL:

The forms for concrete work shall have sufficient strength and rigidity to hold and to withstand the pressure of fresh concrete during compaction, incl. live load and shaped to the required line within the tolerance specified. The tolerances specified are for finished concrete surface and not for the forms. For further details regarding design, details, etc reference may be made to IS-14687. As far as possible; the forms shall be of steel material. The supports shall be so arranged to keep the maximum deflection within 1/360 of the span. Suitable devices shall be used to hold corners, adjacent ends of panels of other forms together in accurate alignment, during compaction of concrete by vibrator or other means. The forms and their joints shall be tight enough to prevent loss of mortar or water from concrete while vibrating. The contractor shall prepare detail design and drawings for the execution of formwork, centering, support system and temporary works as per IS requirement and shall have to submit well in advance for approval to the engineer in charge. The contractor shall be responsible and liable to pay all claims and compensation arising from any loss or damage to life and property due to any deficiency, failure of centering or the temporary works.

ii) CLEANING AND TREATMENT OF FORMWORK:

Surface of forms shall be kept free from encrustations, mortar, sawdust, chippings etc that would contaminate the concrete. The surface of formwork in contact with the concrete shall be cleaned and treated with form release agent approved by engineer in charge. Release agents should be applied so as to provide a thin uniform coating to the forms without coating the reinforcement.

iii) ERECTION OF FORMS:

Where forms for continuous surface are placed in successive units, the forms shall fit tightly over the complete surface, so as to prevent leakage of mortar from the concrete and to maintain accurate alignment of the surface. Forming of block joints to the concrete portion shall be done carefully to ensure smooth joints and avoid sharp deviation, projections or edges and particular attention shall be paid in setting and tightening the forms to ensure that the contraction joint's surfaces are in accurate alignment & plumbs. Specifications laid down in IS-457 shall be applicable.

iv) REMOVAL OF FORMS:

In general specifications laid down in IS-457 and IS-456-2000 shall be applicable. However stripping time will be decided by engineer in charge based on minimum strength to be attained by the concrete for safe removal of forms. Following is for general guidance only.

- a) Concrete not subject to appreciable bending or direct stress or not reliant on forms for vertical supports. (Vertical face): 24 Hrs after final setting or not liable to injury due to form removal.
- b) Concrete subject to appreciable bending & direct stress & partially reliant on forms for vertical support:
 - i) Vertical surfaces, unloaded columns, walls etc: 3 days.
 - ii) Galleries, arches, loaded columns and walls etc: 10 days.
 - iii) Roof of floor slabs, walkways, platforms etc: 20 days
 - iv) Heavily reinforced beams, bridge deck slabs and girder and other heavy sections: 30 to 38 days or as instructed by engineer in charge.

Preparation for Placing:

These minimum requirements are, by experience, known to be safe and no claims shall be entertained by government for damages alleged by owing to the requirements not being sufficient. The Contractor may where, and if he so desires, extend the above to longer intervals. This however shall not construe any reason for any claims or extension of time limit.

Generally no concrete shall be placed until all form works, installation of parts to be embedded and preparation of surface involved in the placing have been approved. No concrete shall be placed in water, except with the written permission of the Engineer - in charge and method of depositing the concrete shall be subject to his approval. All surface of forms and embedded materials that have become encrusted with dried mortar or grout and from the concrete previously placed, shall be cleaned of all such mortar or grout before the surrounding or adjacent concrete is placed.

Foundation Surface:

Immediately before placing concrete, all surface of foundation upon or against which concrete is to be placed, shall be free from standing water and debris. All surface of rock upon or against which concrete is to be placed shall, in addition to the foregoing requirements, be clean and free from all objectionable coatings & loose semidetached or unsound fragments and shall be sufficiently rough to assume satisfactory bond with concrete.

Surface of Contraction & Construction Joints:

Concrete surface upon or against which concrete is to be placed and the surface of existing concrete to which new concrete is to be bonded and the surface of concrete placed under these specifications to which new concrete is to be placed on old concrete is so rigid that the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints. The surface of construction joints shall be clean rough & dry when covered with fresh concrete. Cleaning shall consist of removal of all laitance, loose or defective concrete coatings, and sealing compound, if used, and other foreign material. The surface of construction joints shall be washed thoroughly with air and water jets and surface dried prior to placement of adjoining concrete. Drying of the surface shall be completed and may be accomplished by air jet. The surface of all construction joint shall be cleaned thoroughly of accretions of concrete or other foreign materials by scraping, chipping or other means approved by the Engineer - in - charge. Proper bonding between old and new concrete shall be ensured by the contractor at time of starting each lift.

Chipping and Roughening of Concrete Surface:

Concrete surface upon or against which additional concrete is to be placed, shall be chipped off and roughened to a depth not more than 2 cm. The roughening shall be performed by chipping or other satisfactory method and in such a manner as not to loosen or shatter any part of the concrete beyond the roughened surface. After being roughened, the surface of the concrete shall be cleaned thoroughly of all loose fragments, dirt and lime and other objectionable materials and shall be sound and hard and in such conditions as to assume good mechanical bond between old and new concrete. All concrete which is not hard, dense and durable shall be removed to the depth required to secure a satisfactory surface. Cost of work of chipping and roughening shall be deemed to have been included in the rate tendered for the item of concrete.

PLACING:

The contractor shall keep the engineer advised as to when placing of concrete will be performed. Unless inspection is waived in each specified case as directed in writing by the engineer, placing of concrete shall be performed only in the presence of an authorized representative of the engineer.

The surface of the all rock and concrete against which concrete is to be placed, shall be thoroughly cleaned and damped. After the surfaces are prepared satisfactorily, horizontal surfaces of rock and construction joints shall be covered with a layer of mortar approximately 15 mm thick in the case of concrete surfaces and 20 mm thick on rock surfaces.

The water cement ratio for the mortar layer shall not exceed that for the regular concrete mixture, and the mortar shall be of such consistency that it can be spread evenly without flowing. It shall be thoroughly boomed and worked in to all irregularities, cracks and crevices. The manner of spreading and working shall be such as not to cause any segregation and concrete shall be placed immediately upon the fresh mortar before its initial set.

In placing concrete against formed construction joints, the surface of the joints, where accessible, shall be coated thoroughly with the wire brooms dipped in the fresh mortar. Where is impracticable to apply such mortar coating, special precautions shall be taken to ensure that the new concrete is brought to intimate contact with the surface of the joints by careful puddling and padding with the aid of suitable tools.

Re tamping of concrete shall not be permitted. Any concrete which has become so stiff that proper placing cannot be assured shall be wasted at contractor's cost. Concrete shall be deposited in all cases as nearly as practicable directly in its final position and shall not be caused to flow such that the internal movement will permit or cause segregation of the coarse aggregate from the concrete mass. Methods and equipment's employed in depositing concrete in forms, shall be such as will not result in clusters or groups of coarse aggregate particles being separated from the concrete mass, but if clusters do occur they shall be shattered before the concrete is vibrated. A few scattered individual pieces of coarse aggregate that can be restored in to the mass by vibration will be objectionable.

Except as intercepted by joints, all formed mass concrete shall be placed in continuous approximately horizontal layers the depth of which generally shall not exceed 60 cm. The Engineer reserves the right to order lesser depth of layers, where concrete in 60 cm layer cannot be placed in accordance with the requirements of these specifications. All intersections of construction joints with concrete surfaces which will be exposed to view, shall be made straight and level or plumb. Construction joints shall be allowed only at places as directed by the Engineer. In reinforced concrete work, the thickness of the layer shall not exceed 45 cm or as directed. In congested parts care shall be taken to see that all the bars are properly embedded and that no voids are left on flat horizontal surface. Where the congestion of steel near the forms makes placing difficult, a mortar of the same cement

sand ratio as is used in the concrete shall be first deposited to cover the forms.

In placing uniform concrete on slopes so steep as to make internal vibrating of the concrete impracticable without form work, the concrete shall be placed ahead of non-vibrated slipped form screed extending approximately 0.75 mm back from its leading edges. Concrete ahead of the slip form screed shall be compacted by internal vibrator so as to ensure complete filling under the slip form.

COMPACTION

Concrete shall be thoroughly compacted fully marked around reinforcement fixtures, and in corner of form work. concrete shall be completed using niddle vibrator, over & under vibration is harm full and should be avoided, complete consolidation can be judge by evidence of levelled appearance of concrete.

In compacting each layer of concrete, the vibrator shall be operated in near vertical position and the vibrating head shall be allowed to penetrate and re vibrate the concrete in the upper portion of the underlying layer. Layers of concrete shall not be placed until the layers previously placed have been worked thoroughly as specified. Care shall be exercised to avoid contact of the vibrating head with surface of the forms, displacing reinforcement and embedded metal parts. Large voids of air pockets which may be left in the permanently exposed faces of the structure by vibration shall be eliminated by systematically padding the surface with an appropriate flat tool.

Excessive vibration causing segregation or tending to bring an excessive amount of the water to the surface shall be avoided.

Disturbance of the surface concrete of construction joint during the early stage of hardening shall be avoided.

Intentional re vibration of some concrete is beneficial provided the concrete becomes momentarily plastic again during vibration. Re vibration shall be resorted to only after specific instructions are given by the Engineer.

WEATHER CONDITIONS:

Concrete operations shall be temporarily suspended during excessively hot, cold or inclement (severe) weather, high tides, cyclone or whenever conditions are such that concrete cannot be properly placed and cured.

During hot weather no concrete shall be deposited when the temperature within the forms is more than 120° F. Whenever necessary, exposed surface of fresh or green concrete shall be shaded from the direct rays of the sun and immediately protected against premature setting or drying by being cured under continuous fine spray of water.

During continued rainy weather, heavy downpour, high tides, cyclone all freshly placed concrete shall be covered and protected against surface flow of water. The top of all badly washed or streaked surface shall have to be removed and washed without extra payment before depositing the next course.

FINISHING:

The surface of concrete finished against forms shall be smooth and shall be free from projections, honey combing and other objectionable defects. Immediately on the removal of forms all unsightly ridges or lips shall be removed and undesirable local bulging on exposed surface should be remedied by tooling and rubbing, repairs to concrete surface and additions where required shall be made by cutting regular opening in to the concrete and placing fresh concrete to the required lines. All exposed concrete surface shall be cleaned of impurities, lumps of mortar and concrete or grout and unsightly stains.

The concrete shall be finished to an even and smooth surface free from pockets, voids or exposed aggregates. This shall be obtained by careful use of long handled steel trowel, Any

remaining roughness spots shall be rendered smooth without any time interval after laying the concrete, with cement mortar of 1:3 proportion.

Concrete proportions and consistency and method of compaction should be such that sufficient mortar is available at the surface for finishing purpose.

Over indeed or too wet or over consolidated mix is likely to be covered with bleed water. They may be corrected for better finishing, such water shall be allowed to drain or absorb or scrap.

Sprinkling of dry or a dry mortar should not be permitted. If surface is trowelled too soon a layer of laitance is found, if too late, the partly handed concrete is too hard to be troweled effectively.

CURING PROTECTION:

All concrete shall be protected against injury until final acceptance. Unhardened concrete shall be protected from heavy rains and flowing water. No fire or excessive load shall be permitted near or indirect contact with the concrete at any time. All conduits and other dam openings, shall be bulk headed during construction period to prevent free circulation of air and resultant drying of concrete. Exposed finish surface of concrete shall be protected from the direct rays of the sun for at least first three days after placement. Such protection shall be made effective as soon as practicable after placing of unformed concrete or after the removal of forms of formed concrete.

Exposed finished surfaces of concrete shall be protected from the direct rays of sun for at least 72 hours after placement. Concrete shall be kept continuously moist up to 14 days as prescribed and directed. Concrete shall also be kept moist for at least 72 hours prior to the placing of additional concrete up to the joints. Approximately horizontal surfaces shall be cured by sprinkling or by covering by damp sand or may be cured by covering with mats. If damp sand is used for curing, it shall be removed completely. Later, water curing shall be used on all concrete work. It shall be applied by means of sprays or sprinklers or making adequate pools.

Forms shall be kept sprinkled until removal. The contractor shall protect all concrete against injury until final acceptance by the Engineer.

REPAIRS OF CONCRETE:

Repairing of concrete shall be carried out at contractors cost by skilled workers. All imperfections of the concrete surface shall be corrected to obtain the surface of concrete that confirm to the Repairs of imperfection in concrete shall be completed with- in 24 hrs after removal of forms. Concrete with excessive surface depression or suppression, honeycombed, fractured or other- wise defective concrete shall be removed and redone at contractors cost. Specification laid down in IS-457 shall be applicable.

RECORD OF CONCRETING OPERATIONS:

A systematic joint record in the form approved by the Engineer shall be maintained to record the details regarding weighing and use of cement, number of mixes of concrete and of mortar used on works, rejected mixes, locations in which concrete or mortar is used etc. This record shall be signed by the engineer or his authorized representative on the site in token of having scrutinized and verified and correctness of the entries made in the joint record. If the contractor fails to scrutinize and verify the entries and sign the joint records, the record as scrutinized, verified and signed by the engineer or his representative shall be taken as final and binding on the contractor.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

REINFORCEMENT WORK

SCOPE OF WORK:

This shall include supplying all materials and labour for cutting, bending, binding and erecting in position steel reinforcement, dowel bars, anchors, etc. Required quantity of steel shall be procured by the contractor at his own cost.

REINFORCEMENT WORK:

Steel reinforcement bars shall be placed in the concrete as shown in the drawings or as directed. They shall meet the requirement of I.S. 432 (1995) and I.S. 1786-2008 as applicable. Before steel reinforcement is placed in the position, the surface of the reinforcement shall be cleaned of rust, scale, dirt, grease and other objectionable foreign substances likely to destroy or reduce bond. Heavy, flaky, rust, mill scale that cannot be removed by rubbing with brush or equivalent treatment, shall be considered objectionable. The fact that light early stage rust has no detrimental effect in bond and hence could be disregarded, shall not be used as an excuse for careless handling and storage of steel.

In storing, the bars of the same size, lengths, shapes and grade shall be assembled in a rack and marked distinctly before the reinforcement bars are fixed in position. It shall be verified that they are of the specified diameter and size and are cut and bent in accordance with the plans and specifications. They shall be accurately placed and secured in position by means of bolt in concrete blocks, metallic chairs, rangers, spacers or other suitable devices at sufficient close intervals so that they will neither sag between supports nor be displaced during the placing of the concrete nor by any operation of the work. Special care shall be exercised to prevent any disturbance of the reinforcement, after being placed in position and it shall be maintained in clean condition until it is completely embedded in concrete to prevent further damage to the concrete or unsightly rust stain on exposed concrete surface.

Supports for reinforcement shall be made of cement mortar of same water cement ratio as the concrete to be used in the particular work.

Reinforcement shall not be straightened or bent in a manner that will injure or weaken the material. Bars with kinks or bend not shown in the plans shall not be used. Bars shall be bent to the shapes and dimension shown in the drawings or as directed, using a bar bender, operated by hand or power, to attain bending to the correct specified radius, The radius for bends along the edge of bar shall be not less than 4 times the diameter of the bar. Heating of reinforcement bars to facilitate bending shall not be permitted. However this facility may be permitted in the case of large diameter bars. The temperature of the steel shall not exceed that corresponding to cherry red colour specified by the Chief Officer in charge of work. The reinforcement available from rejected concrete shall not be used without prior approval of the Engineer-in-charge.

Reinforcement may be fixed in position by means of anchor rods, supporting and hanger rods as approved by the engineer. In difficult location tack welding of bars at isolated spots may be permitted to keep these bars in position.

BINDING:

Wire for tying reinforcement shall be soft and annealed mild steel. Conforming to I.S. 280. The diameter of wire may be 16 to 18 B.W.G. (1.63 mm to 1.22 mm). The binding wire shall be free from rust, oil paint, grease etc. which may prevent adhesion of cement mortar.

Metal bars supports shall be fabricated from non-corrodible metal. Dissimilar metals shall not be placed in concrete, in proximity of each other or be joined by a conductor especially in the continued presence of moisture, unless it is known that no galvanic action will result.

The minimum allowable clearance between parallel round bars shall not be less than 1.5 times the diameter and for square bars shall not be less than twice the side dimensions of the bars or of the 1.5 times the maximum size of aggregate, whichever is larger.

SPLICING:

Bar splices as indicated in the drawing or as specified by the engineer shall only be allowed. The lapped ends shall be placed to ensure full bond on each bar.

Splicing shall not be done in the region of maximum bending moment and splicing of adjacent bars shall be avoided as far as possible. Suitable splice length as permitted by the engineer-in-charge or as shown in drawing shall be provided wherever needed. Also splices shall be suitably staggered.

Bars above 25 mm in dia. may be welded without loss of strength, instead of being lapped when permitted or directed by the engineer. The bar to be spliced shall be lap or butt welded by electric welding in the manner specified.

Suitable means shall be provided for holding the bars accurately in position during the welding process. Welded joints shall be made in terms of length of the bar equal to 40 times the diameter of the bars. The welded joints shall be staggered in approved manner. Three percent of the welded joints shall be tested for the tensile strength and the strength shall not be less than the standard specified for the M.S. bars as per the I.S. 432 - 1982. Part- I

COVERS:

Concrete cover to the reinforcement shown in drawing or as directed shall be maintained by providing cement mortar (1:2) blocks of same w/c ratio as the concrete to be used in the particular work.

Sufficient concrete cover shall be provided to protect reinforcement from erosion and shall be as shown in the drawing or as directed. But it shall not be less than 5cms and more than 10cms, depends upon type of structures and exposure condition.

INSPECTION BEFORE CONCRETING:

No concreting shall be started unless the reinforcement as laid is finally checked and recorded and certified by the engineer-in-charge.

TESTING:

Testing of steel shall be done for each size of bars as per provision mentioned in specification of materials in government / government approved laboratory. The charges of the same will be borne by the department.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

GENERAL TECHNICAL SPECIFICATION FOR PLASTERING AND POINTING

1.0 MATERIALS:

i) CEMENT:

Specifications M-2 of section of material shall apply.

ii) WATER:

Specifications M-1 of section of material shall apply.

iii) SAND:

Specifications M-3 of section of material shall apply. The sand to be used only after proper screening to get required FM and shall be of natural sand and shall confirm to IS-1526 also. The FM of the coarse sand for plastering work shall be 2.5 to 3.0 and FM fine sand for plastering work shall not exceed 1.0.

Grading of coarse sand and fine sand shall be as given below.

COARSE SAND		FINE SAND	
IS SIEVE DESIGNATION	% PASSING BY WEIGHT	IS SIEVE DESIGNATION	% PASSING BY WEIGHT
4.75mm	100	4.75mm	100
2.36mm	90 - 100	2.36mm	100
1.18mm	70-100	1.18mm	70-100
600 micron	30-100	600 micron	40-85
300 micron	5-70	300 micron	5-50
150 micron	0-50	150 micron	0-10

2.0 MORTAR AND ITS INGRADIENTS:

Specifications laid down in IS-

i) PROPORTION OF INGRADIENTS:

The cement mortar shall be obtained by mixing cement, sand and water in the proportion as specified by weight or by volume. For volumetric mix 50 kg of cement bag being equal to 0.0342 cum.

ii) MIXING:

The mortar shall be machine mix or hand mix as specified in respective item of work. For major nature of job, only machine shall be allowed.

The cement mortar shall be obtain by toughly mixing the ingredients in mechanically operated mixer/or by hand mixed dry on a clean impervious platform by turning over at least 3 times or more till a homogenous mixture of uniform colour is obtain.

For machine mix. Mixing time shall commensurate with the RPM and capacity of machine.

Following points shall be carefully attended while mixing.

The ingredients are fed into mixer simultaneously. A five to ten percent of water shall be fed first and an equal quantity shall follow the introduction of other material. The remaining water shall be added uniformly and simultaneously when other materials are in the mixer. The addition of water shall be done with calibrated bucket.

QUANTITY OF WATER:-

Mortar shall be such that the working consistency is obtained. The consistency of mortar shall be decided on depending upon the job

iii) TIME OF USE:

Mortar shall be used in masonry within 30 minutes from the time of adding water.

iv) PLACING:

The mortar, shall be collected in large shallow bucket and then transported it by mechanically or manually, to the place of requirement. The mortar shall not be through for a height more than 60 cm, so as to avoid segregation. Where ever mixing is done at higher elevation, chutes formed of plain

G.I. sheets can be used to transport mortar to the place of work. Inclination of the chute should be so adjusted that segregation does not take place.

3.0 SCAFFOLDING:

Wooden bellies, bamboos/steel pipes planks, treatles and other scaffolding shall be sound and shall be examine before use Steel stage scaffolding shall be preferred as far as possible.

4.0 PREPARATION OF SURFACE:

The surface to which plastering is to be done shall be cleaned of all dust, loose mortar droppings trace of algac, efflorescence and other foreign matter by water or by brushing. Smooth surface shall be roughed by wire brushing / chiseling. Trimming of projections on stone/brick/concrete surface where necessary shall be carried out to get an even surface. All joints in stone masonry shall be thoroughly racked out to a depth of 20 mm and the joints and walls washed with fresh water. Surface shall be wetted before plastering.

5.0 APPLICATION OF PLASTER:

Plastering work shall be started from top to down wards. The plaster about 15x15 cms shall be first applied horizontally and vertically at not more than 2 mt. intervals over the entire surface to serve as gauge. The mortar shall then be applied in uniform surface slightly more than the specified thickness. Then brought to a true surface by working a wood straight edge reaching across the gauges with small upward and sideways movement at a time. Finally, the surface shall be finished off true with a trowel or wooden float according to smooth or a sandy granular texture is required. All corners, arise, angles and junctions be truly vertical or horizontal as the case may be shall be carefully finished. Rounding or chamfering corners, arises junctions etc. shall be carried out with proper templates to the size required. In suspending the work at the end of the day, the plaster shall be left out clean to the line both horizontally and vertically. The edge of the old work shall be scraped clean and wetted with cement putty before plaster is applied to the adjacent areas to enable the two to properly join together. Each coat shall be kept damp continuously till the next coat is applied or for a minimum period of 14 days.

6.0 CURING:

The plastered surface shall be kept damp for a minimum period of 14 days.

7.0 MODE OF MEASUREMENT AND PAYMENT:

The rate are inclusive of cost of all materials, labour, scaffolding, curing etc. as describe. The work shall be measured in square meters basis. Thickness of plaster shall be average thickness with minimum 10mm at any point for 12mm thick plaster and 18mm at any point for 20mm thick plaster on the surface. No deduction shall be made for ends of joints, beams, poste etc. and openings not exceeding 0.5 Sq. Mt. each. For openings exceeding 0.5 sq.mt. and not exceeding 3.0 sq.mt. in each area shall be deducted by half. For opening more than 3.0 sq.mt. in area, deduction shall be made for full openings. For building works, rules for measurement and payment of R & B shall be followed. The rate shall be for a unit of one sq, meter.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika

GENERAL TECHNICAL SPECIFICATION FOR MASONRY WORK

1.0 MATERIALS:

i) **CEMENT:**

Specifications M-2 of section of material shall apply.

ii) **WATER:**

Specifications M-1 of section of material shall apply.

iii) **SAND:**

Specifications M-3 of section of material shall apply. The sand to be used only after screening and shall be of natural sand and shall confirm to IS-2116 also. The grading of sand shall be as per Table given below.

GRADING OF SAND (IS-2216)		
Sr. No.	IS SIEVE SIZE	PERCENTAGE PASSING BY WEIGHT.
1	4.75mm	100
2	2.36mm	90-100
3	1.18mm	70-100
4	600 Micron	40-100
5	300 Micron	5-70
6	150 Micron	0-15

iv) **STONE:**

Specifications M-12 of material section shall apply. The dimensions of the stones to be used shall not be less than 15 cm on any face. Weight of stone to be used shall not be less than 25 kg. and shall not be more than 40 kg. And percentage of spalls shall not exceed more than 10% of the volume of stone masonry.

2.0 MORTAR AND ITS INGREDIENTS:

Specifications laid down in IS-2250 (preparation and use of masonry mortar) shall apply.

i) **PROPORTION OF INGREDIENTS:**

The cement mortar shall be obtained by mixing cement, sand and water in the proportion as specified by weight only. Suitable weight scale of required capacity approved by engineer shall be kept at site. Steel measuring boxes with adjustable bottom shall be used in weighing sand corresponding to the weight of cement as approved by engineer in charge. However volumetric batching after conversion will only be allowed with written permission of engineer in charge in unavoidable circumstances and for very small quantity of works. but other than masonry dam.

ii) **MIXING:**

The cement mortar shall be obtained by thoroughly mixing the ingredients in mechanically operated mixer. Mixing time shall commensurate with the RPM and capacity of mixer used and shall be as per IS-2250. Mixing shall be continued till proper mix is done and minimum mixing time shall be as specified in IS-8605. (1.5 minutes for 1.50 m³ or less capacity mixer) Over mixing is objection- able Following points shall be carefully attended while mixing.

The ingredients are fed into mixer simultaneously five to ten percent of water shall be fed first and an equal quantity shall follow the introduction of other material. The remaining water shall be added uniformly and simultaneously when other materials are in the mixer. The addition of water shall be done with calibrated bucket.

QUANTITY OF WATER:- The mortar mix shall be neither too dry nor too wet: when used. The mortar shall have just enough water to stick together on being moulded into a ball by light pressures of hand but not too much free water exclude. The quantity of water to be added to the mortar shall be such that the working consistency is obtained. The consistency of mortar shall be measured in accordance with the procedure given in IS-2250, if required & referring flow table given in IS-5512. The consistency of mortar shall be decided on depending upon the job and well before the actual work start by casting preliminary test cube in the laboratory.

iii) **TIME OF USE:**

Mortar shall be used in masonry within 30 minutes from the time of adding water.

iv) **PLACING:**

The mortar coming out of mixer, shall be collected in large shallow bucket and then transported it by mechanically or manually, to the place of requirement. The mortar shall not be throw for a height more than 60 cm, so as to avoid segregation.

Wherever mixing is done at higher elevation, chutes formed of plain G.I. sheets can be used to transport mortar to the place of work. Inclination of the chute should be so adjusted that segregation does not take place.

v) **FREQUENCY OF TEST AND COMPRESSIVE STRENGTH:**

The frequency of sampling of mortar separately for each mix proportion shall be at least one set of three test cubes at every 100 m³ of masonry work per day, per shift per mixer. The preliminary mortar cubes for testing from the design mortar mix shall be casted at suitable intervals using the approved materials in the field laboratory and their 28 days compressive strength will be find out in advance. These strength will be deemed as the standard strength for the mortar. The testing of the mortar shall be done in accordance with IS-2250. The size of the test cube shall be 5x5x5 cms. The 28 days compressive strength of field test sample of mortar cube shall not be less than 80% of the preliminary test cube's compressive strength. However, the strength of test cube at 7 days shall be taken to watch the gain in the strength. In case the results fails to fulfill the IS requirements, the respective portion of the work shall be removed and redone by the contractor at his own cost. Also cost of testing in such cases shall be borne by the contractor.

3.0 SURFACE PREPARATION BEFORE LAYING OF MASONRY:

Specifications laid down in IS-8605 shall apply.

i) **MASONRY IN CONTACT WITH FOUNDATION:**

Before starting the masonry, the foundation shall thoroughly be cleaned for all loose and undesirable materials, either by way of wire brooms/brushes, hammers, picks, compressed air jet, water jet, etc. so as to get cleaned hard surface.

The foundation shall be kept completely dewatered during masonry work and till such time as would be required for masonry to set. The foundation/top surface of old masonry shall normally be kept moisture for twenty four hours.

Before laying masonry over the finally prepared surface, cement slurry of one cement to about 2/3 water by volume, shall be sprayed over to cover whole surface, just before laying new masonry. A layer of 50 to 75 mm thick cement sand mortar of proportion 1:3 shall be laid over slurry before laying masonry. No

extra payment shall be made for this.

II) MASONRY IN CONTACT WITH MASONRY:

Surface of masonry shall be treated as follows before laying fresh masonry over it. Loose stones, if any, shall be removed. Mortar joints shall be scraped with iron rods & the exposed faces of stone shall be wire brushed. The surface shall be cleaned with air- water jet. The water collected in the depressions of masonry shall be removed.

iii) MASONRY IN CONTACT WITH OLD MASONRY:

Surface of old masonry which has been exposed for a long time, that is, more than 28 days, shall be treated as follows. Looser stones, if any, shall be removed. Old mortar joints shall be scraped to a depth of 15 mm or wet sand blasted & washed with air-water jet. Immediately prior to placing of masonry, the old masonry surface shall be treated in the same way as for foundation masonry described above.

4.0 MASONRY (GENERAL):

Specifications laid down in IS-8605 shall apply.

Masonry is classified as per the type of mortar that shall be used, notwithstanding the locations. Masonry shall to be done as per working drawing or as instructed by engineer in charge. The work shall be true to line and level, square, plumb, curved or batter as may be required to meet the design requirement and shall be carried out in a workman like manner with the aid of moulds, templates, centering, scaffolding etc. without any extra cost.

All block out, slots etc. required to embed foundation bolts and other embedded parts for various instrumentations and construction joints etc. shall be provided by the contractor without any extra cost.

There shall be adequate collection of stones and spalls within the reach of each mason to enable proper selections of stones for individual locations, while laying and the stones shall be continuously replenished. Stones to be used immediately shall be sprinkled with clean water.

5.0 MODE OF LAYING:

Specifications laid down in IS-8605 shall apply.

The stone shall be laid carefully in mortar on their natural flatbed so as to break joints as far as possible. The stone shall be pressed & hammered down by a mallet so as to bring out all excess water and locked air from mortar. If it is required to move stones after it is placed in position, it shall be lifted clearly and then placed. No joints shall exceed 20 mm thickness nor shall it be less than 12 mm in thickness. The joints shall be filled well with mortar & suitable chips & spalls. driven into them so as to avoid thick joints. The smaller stones used in the filling shall be carefully selected to fit snugly into the interstices between the longer ones. Mortar to be added to the intervening places be well worked by trowels and the light hand bar 12mm dia. and sufficiently long to ensure proper mixing and blending with the bottom mortar. Care shall be taken to see that joints in masonry already laid are not disturbed. while handling or moving stones. The masonry surface shall be kept as rough as possible to secure a good bond between successive layers and shall be wire brushed on the next day to remove all excess mortar etc.

6.0 PRECAUTIONS TO OBTAIN DENSE MASONRY:

In order to obtain dense masonry, the following precautions shall be taken.

- i) Under pinning shall be avoided once a stone is laid as it tends to lift the

- stones and create the air pockets.
- ii) Insertion of spalls and chips in the intervening space before filling in with mortar shall not be permitted.
 - iii) Leveling of masonry on top of the course by use of spalls and chips shall not be permitted.
All chips will be driven as the masonry which will help to squeeze and compact at the joints.

7.0 GENERAL RULES FOR BETTER WORKMANSHIP:

General rules for better workmanship are as follow.

- i) Clean the previous days masonry surface by wire brush prior to starting masonry. Chipping should be resorted to only in extreme causes.
- ii) Thoroughly and efficiently broom into the old surface, placed a layer of mortar and built the masonry course on it immediately.
- iii) Shakes the mortar well by vibrating the stone by hand bar to ensure that the excess mortar, water and the entrapped air come out and are not trapped at the bottom before driving in chips. The stones shall than be hammered down by a wooden mallet (10 to 12 lbs) and press towards the adjacent stones at the same time without touching it.
- iv) Avoid under pinning after a stone is laid.
- v) Avoid putting flat chips at top.
- vi) Keep the masonry surface as rough as possible.
- vii) After the masonry is done, do not permit it to be disturbed until it has attained sufficient strength.
- viii) Hammering or breaking of stone on fresh masonry shall not be permitted.
- ix) Wire brush the masonry surface after the mortar has set finally.
- x) Keep the masonry continuously moist until the next layer is placed after the necessary time interval, for a period of 21 days.

8.0 CURING OF MASONRY:

All masonry, as in progresses, shall be kept well-watered on the top and sides and both the faces for a period of not less than 21 days from the date of building.

9.0 QUANTITY OF MORTAR:

Full efforts shall be put into ensure that sufficient quantity of mortar is used in the masonry. The quantity of mortar used shall be not less than 40% & not more than 48% by volumes of the masonry dry laid.

10.0 WEAK OR DEFECTIVE MASONRY:

Any portion of masonry found to be weak or defective in construction, shall be removed and rebuilt by the contractor at his own cost.

11.0 STONE FOR COURSED FACE WORK:

The height of the stone for face work shall be uniform and is recommended to be 300mm including mortar joints. The length and depth of the face stone shall not be less than the height of the stone. At least 50% of the stones shall have length more than twice the height of the stone. At least one third of the remaining stones shall be bond stones projecting not less than

2.5 times the height into the masonry. The remaining shall be header stones with depth not less than 1.5 times the height of the stone. The stones shall be hammer dressed on face and one line chisel dressed on one bed, top and sides for a the stones shall be true and rectangular. Beyond 75 mm depth, the stones may be tapered but the tail end of the stones shall have at least half the area of the face. Bushing on the faces of the

stones shall not project more than 40 mm.

HEADER STONES:- The header stones shall not be less than 300 mm in length and one and a half times the height in depth.

STRETCHER STONES:- The stretcher stones shall not be less than 600 mm in length and not less than its height in depth.

BOND STONES:- The bond stones shall not be less than 300 mm in length and two and a half times its height in depth.

QUOINS:- Quoins stones shall be of the same height as the face stones, but shall be true and rectangular on two face with one line dressing for 75 mm depth in beds and sides. The stones shall be at least 300 mm long on one face and 450 mm on the other face.

12.0 STONE FOR UNCOURSED FACE WORK:

Stones for un-coursed face work shall be selected stones meeting requirement of stones for coursed face work except that the stones shall be hammer dressed. The stones shall be nearly rectangular.

13.0 FACE WORK:

The face work shall be of selected stones and dressed as mention in **Para 11.0** above the work shall be in parallel courses of uniform thickness. In each course, stones shall be built-in header and stretcher fashion & joints shall break in courses above and below by at least half the height of the course. In case of U.C.R. masonry the header stones shall be placed at about 1.0 mt. c/c. The joints in face work shall not be thicker than 15 mm for single-line chisels-dressed stones or 20 mm for hammer dressed stones. Bond stones in each course shall be so provided that every sixth stone or third header stone is a bond stone. In case of un-coursed face work the bond stones shall be placed at about 2.5 mt c/c. The bond stones shall be staggered and marked for identification. The face masonry shall preferably be constructed simultaneously with the hearting masonry.

The face work shall be struck neatly and smoothed off with a trowel before the mortar takes the final set.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

ITEM WISE DETAILED SPECIFICATION

DETAILED TECHNICAL SPECIFICATION BOOKLET: AS PER ATTACH SEPARATE SHEET.

- PAYMENT OF EACH ITEM AS PER SCHEDULE: B QUANTITY & RATE.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

SECTION - 6
FORM OF BID

FORM OF BID

Description of the Works:

_____BID

To

÷ Address _____

1. We offer to execute the Works described above and remedy any defects therein in conformity with the conditions of Contract, specification, drawings, Bill of Quantities and Addenda for the sum (s) of

(.....)

2. We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer's notice to commence, and to complete the whole of the Works in the Contract within the time stated in the document.

3. We agree to abide by this Bid for the period of 120 Days from the date fixed for receiving the same, and it shall remain binding upon it and may be accepted at any time before the expiration of that period.

4. Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

5. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this _____ day of _____ 2026

Signature _____ in the capacity of _____
_____ duly authorized to sign bids for and on behalf of _____
_____ (in block capitals or typed)

____ Address

.....

.....

Witness

.....

.....

Address

.....

.....

Occupation

.....

.....

SECTION - 7
BILL OF QUANTITIES

BILL OF QUANTITIES

Preamble

1. The bill of Quantities shall be read in conjunction with the Instructions to Bidder, Conditions of Contract, Technical Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at the rates and prices tendered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix within the terms of the Contract.
3. The rates and prices tendered in the priced Bill of Quantities shall, except in so far as it is otherwise provided under the Contract, include all constructional plant, layout, supervision, materials, erection, maintenance, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract.
4. The rates and prices shall be quoted entirely in Indian Currency.
5. A rate or prices shall be entered against each item in the Bill Quantities, whether quantities are stated or not. The cost of Items against which Contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities (in case of Item rate contract).
6. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no Items are provided the cost shall be deemed to be distributed among the rates and prices entered for the related items of Work.
7. General direction and descriptions of work and materials are not necessarily repeated or summarized in the Bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering rates or prices against each item in the Bill of Quantities.
8. The method of completed work of payment shall be in accordance with the specification for Road and Bridge works. For building works specifications for building are to be followed.
9. Errors will be corrected by the Employer for any arithmetic errors pursuant to **Clause 29** of the Instructions to Bidder.
10. Rock is defined as all materials which, in the opinion of the Engineer, required blasting, or the use of metal wedges and sledgehammers, or the use of compressed air drilling for its removal, and which cannot be extracted by ripping with a tractor of at least 150 kw with a single rear mounted heavy duty ripper.

KHERALU NAGARPALIKA, KHERALU

Name of Project :- Bid Documents for Construction work of Asphalt Road and R.C.C Road in Various Area, at.Kheralu Nagarpalika, under SJMMSVY (UDP-88) (Year 2024-25) (Savings Amount), Dist:- Mehsana (2nd Attempt)

SCHEDULE - ABSTRACT

Sr. No.	Description	Estimated Cost	Tender Cost
B1	Asphalt Road from Khadiya Road to Khari Kui Taraf, At.Kheralu	26,90,294.00	
B2	Asphalt Road from Khokharvada Sangh to Khadiya Taraf, At.Kheralu	13,24,716.00	
B3	Asphalt Road from Vrundawan Char Rasta Left Side Road, At.Kheralu	33,04,468.00	
B4	Asphalt Road from Vrundawan Char Rasta Right Side Road, At.Kheralu	33,04,468.00	
B5	R.C.C. Road from Thakorvas to GEB Taraf, At.Kheralu	<u>22,36,477.00</u>	
TOTAL COST		1,28,60,423.00	
SAY TOTAL COST		1,28,60,423.00	
I/We am/are willing to carry out the work at... % above/below percent (Should be written in figures and words) of the estimated rate mentioned above. Amount of my/our tender works out as under Estimated amount put to tender Estimated amount put to tender Deduct.....% below Add.....% Above			
Net Net.....			
In words In words.....			
The 18% GST will be Paid Separately for the tender rate shown in the Schedule B			
The Contractor shall exhibit a board with detailed specification and details of work as directed by the Engineer-In-Charge for which no extra payment shall be made.			
The labour cess will be deducted as per prevailing rules i.e. 1% of the work done.			
GST and Income tax TDS will be deducted at a source while making payments of bills			
Signature of Contractor		Signature of Chief Officer	

SECTION - 8
SECURITIES AND OTHER FORMS

BID SECURITY (BANK GUARANTEE)

WHEREAS, ----- (name of Bidder) (hereinafter called the "The Bidder") has submitted his bid Dated ----- (Date) for the construction of --
----- (Name of Contractor hereinafter called "the Bid")

KNOW ALL PEOPLE by these presents that We -----
(Name of Bank) of ----- (name of country) having our
Registered office at ----- (hereinafter
called "the bank") are bound unto ----- (name of
Employer)

(here in after called "The Employer") in the sum of -----*
For which payment well and truly to be made to the said Employer the Bank itself, his
successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this ----- day of ----- 20

THE CONDITIONS of these obligations are:

- (1) If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified
in the Form of Bid;

Or

- (2) If the Bidder has been notified of the acceptance of his bid by the Employer during
the period of Bid Validity:

- A Fails or refuses to execute the Form of Agreement in accordance with the Instructions
to Bidders, if required; or
- B. Fails or refuse to furnish the Performance Security, in accordance with the Instructions
to Bidders; or
- C. does not accept the correction of the Bid Price pursuant to Clause-27 (Correction
of Errors)

We undertake to pay to the Employer up to the above amount upon receipt of his first
written demand, without the employer having to substantiate his demand, provided that
in his demand the Employer will note that the amount claimed by him is due to him owing
to the occurrence of one or any of the three conditions, specifying the occurred conditions
or conditions.

This Guarantee will remain in force up to and including the date -----**
days after the deadline for submission of Bids as such the deadline is stated in the
Instructions to Bidders or as it may be extended by the Employer, notice of which extension
(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the
Bank not later than the above date

DATE -----

SIGNATURE-----

WITNESS -----

SEAL -----

(Signature, name and address)

* The Bidder should insert the amount of the guarantee in words and figures denominated in
Indian Rupees. This figure should be the same as shown in Clause 16.1(Bid Security) of the
Instructions to Bidders.

****45 days after the end of the validity period** of the Bid. Date should be inserted by the
Employer before the Bidding documents are issued.

PERFORMANCE SECURITY

TO,

----- (Name of Employer)
----- (Address of Employer)

WHEREAS ----- (name and address of contractor) (hereafter called "the Contractor") has undertaken, in pursuance of Contracts No. ----- Dates ----- to execute ----- (name of Contract and brief description of Works) (hereinafter called "The Contract")

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligation in accordance with the Contract.

AND WHEREAS we have agreed to give the Contractors such a bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of ----- (amount of guarantee)* ----- (in words), such sum being payable in types and proportions of currencies in which the Contract prices is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of ----- (amount of guarantee) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting is with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract to of the Works to be performed thereunder or of any of the Contract documents which may be made between your and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such charge, addition or modifications.

This guarantee shall be valid until 60 days from the date of expiring of the Defect Liabilities period.

Signature and Seal of the guarantor ----- Name of Bank -----

Address -----
Date -----

*An amount shall be inserted by the Guarantor, representing the percentage the Contract price specified in the Contract denominated in Indian Rupees.

ADDITIONAL PERFORMANCE SECURITY

[Clause 34.1. (A)]

TO,

----- (Name of Employer)
----- (Address of Employer)

WHEREAS ----- (Name and address of Contractor)
(hereafter called "The Contractor") has undertaken, in pursuance of Contracts No. -----
----- Dates ----- to execute ----- (Name of Contract and
brief description of Works) (hereinafter called "The Contract")

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish
you with a Bank Guarantee by a recognized bank for the sum specified therein as security for
compliance with his obligation in accordance with the Contract.

AND WHEREAS we have agreed to give the Contractors such a bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf
of the Contractor, up to a total of ----- (Amount of guarantee)
(In words), such sum being payable in types and proportions of currencies in which the Contract
prices is payable, and we undertake to pay you, upon your first written demand and without
cavil or argument, any sum or sums within the limits of -----
(amount of guarantee) as aforesaid without your needing to prove or to show grounds or reasons
for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before
presenting is with the demand

We further agree that no change or addition to or other modification of the terms of the
Contract to of the Works to be performed thereunder or of any of the Contract documents which
may be made between your and the Contractor shall in any way release us from any liability
under this guarantee, and we hereby waive notice of any such charge, addition or modifications.

This guarantee shall be valid until **28 days** from the project completion date.

Signature and Seal of the guarantor -----
Name of Bank -----
Address-----
Date-----

BANK GUARANTEE FOR ADVANCE PAYMENT

TO,

----- (Name of Employer)

----- (Address of Employer)

----- (Name of Contractor)

Gentlemen:

In accordance with the provisions of the Conditions of Contract, sub-clause 51.1 ("Advance Payment") of the above mentioned Contract, ----- (name and address of Contractor) (hereinafter called "the Contractor") shall deposit with ----- (name of Employer) a bank guarantee his proper and faithful performance under the said Clause of the Contract in an amount of (amount of Guarantee)* ----- in words).

We, the ----- (bank of financial institution), as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to ----- (name of Employer) on his first demand without whatsoever right of obligation on our part and without his first claim to the Contractor, in the amount not exceeding ----- (amount of guarantee)* ----- (in words)

We further agree that no change or addition to or other modifications of the terms of the Contractor or Works to be performed thereunder or of any of the Contract documents which may be made between ----- (name of Employer) and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modifications.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until ----- (name of employer) receives full repayment of the same amount from the contractor.

YOUR'S TRULY

Signature and Seal _____

Name of Bank/ Financial Institution _____

Address _____

Date _____

* An amount shall be inserted by that Bank or Financial Institution representing the amount of the Advance Payment, and denominated in Indian Rupees.

Letter of Acceptance
(Letter head paper of the Employer)

_____(Date)

To, _____(Name and address of the Contractor)

Dear Sirs,

This is to notify you that your Bid dated _____ for execution of The _____ (Name of the contract and identification number, as given in the Instructions to Bidders) for the Contract Price of Rupees _____ (_____) (amount in words and figures) as corrected and modified in accordance with the Instructions to Bidders* is hereby accepted by our agency.

You are requested to furnish performance security, in the form detailed in para 34.1 of ITB for an amount equivalent to Rs. _____ within **10 days** of the receipt of this letter of acceptance up to beyond **60 days** from the date of expiry of defects Liability period i.e. up to _____ and the Additional Performance Security for an amount equivalent to Rs. _____ shall be valid beyond 28 (twenty-eight) days of Project Completion Date i.e. up to and sign the contract, failing which action as stated in Para 34.3 of ITB will be taken.

Yours Faithfully

Authorized Signature
Name and title of
Signatory Name of
Employer

* Delete "Corrected and" or and modified if only one of these actions applies. Delete as corrected and modified in accordance with the Instructions to Bidders, if corrections or modifications have not been affected.

Issue of Notice to proceed with the work
(Letterhead of the Employer)

----- (date)

To,

_____(Name and address of the Contractor)

Dear Sirs,

Pursuant to your furnishing the requisite security in ITB Clause 34.1 and signing of the Contract for the construction of _____

At a bid Price of Rs. _____.

You are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully

(Signature, name and title of signatory authorized to
sign on behalf of Employer)

AGREEMENT FORM

This agreement, made on the _____ day of _____ between _____ (name and address of Employer) (Hereinafter called “the Employer”) and _____ (name and address of contractor) hereinafter called “the Contractor” of the other part.

Whereas the Employer is desirous that the Contractor execute

Name and identification number of contract (hereinafter called “the works”) and the employer has accepted the Bid by the Contractor for the execution and completion of such works and the remedying of any defects therein, at a cost of Rs. _____

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS

1. In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to and they shall be deemed to form and be read construed as part of this Agreement.
2. In Consideration of the payment to be made by the Employer to the contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to executive and complete the works and remedy any defects therein in conformity in all aspects with the provisions of the contracts.
3. The employer hereby covenants to pay the Contractor in consideration of the execution and completion of the works and the remedying the defects wherein contract price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the contract.
4. The Following documents shall be deemed to form and be ready and construed as part of this Agreement viz.
 - i) letter of Acceptance
 - ii) Notice to proceed with the works:
 - iii) Contractor’s Bid
 - iv) Conditions of contract: General and Special
 - v) Contract Data
 - vi) Additional conditions
 - vii) Drawings
 - viii) Bill of Quantities and
 - ix) Any other documents listed in the Contract data as forming part of the Contract.

In witness whereof the parties there to have caused this Agreement to be executed the day and year first before written

The Common seal of _____
Was hereunto affixed in the presence of:

Signed, sealed and Delivered by the said _____

In the presence of

Binding signature of Employer _____

Binding Signature of Contractor _____

UNDERTAKING

(For Investment)

I, the undersigned do hereby undertake that our firm M/s
..... would invest a minimum cash up
to ~~25%~~ of the value of the work during implementation of the contract.

(Signed by an Authorized officer of the firm)

Title of officer

Name of firm

DATE

UNDERTAKING
(For Validity)

I, the undersigned do hereby undertake that our firm M/s
..... agree to abide by this bid for a period days
for date fixed for receiving the same and it shall be binding on us and may be
accepted at any time before the expiration of that period.

(Signed by an Authorized officer of the firm)

Title of officer

Name of firm

DATE

SECTION - 9
DRAWINGS

SECTION - 10
DOCUMENTS TO BE FURNISHED BY BIDDER

PRE-QUALIFICATION CRITERIA

Documents Submit By Bidder along with tender documents

(Also upload along online during Bid Submission)

Sr. No.	Name of Documents.	Reference Clause.	Reference Format Page No.
1	Bid Document Fee/Tender Fee (Rs.4,248.00 (3,600.00 + 18% GST) (Non-refundable))	As per NIT	-
2	Bid Security / EMD (Rs.1,28,610.00)	As per NIT	-
3	Registration Certificate of Appropriate Class "C" and above		-
4	I.T. Return Copy of Last Three Years Only		
5	Turn Over certificate 30% of Estimated Amount in Average of Last ThreeYear (Rs.38.58 Lac)		
6	Pan card		-
7	GST Number with last 3 months GST Challan		
8	EPF Number with last 3 months EPF Challan		
9	Current Year solvency certificate of an 20% of the Tender Amount of Scheduled Bank or Nationalized Bank or Bank Approved for Government business (Rs.25.72 Lac)		-
10	Experience of having successfully completed Asphalt Road works during last 5 year ending last day of month previous to the one in which applications are invited should be either of the following. (Only in Form-3(A) Certificate). i) Three Asphalt Road Completed works costing not less than the amount equal to 40% of the estimated cost. (Rs.51.44 Lac) OR ii) Two Asphalt Road Completed works costing not less than the amount equal to 50% of the estimated cost. (Rs.64.30 Lac) OR iii) One Asphalt Completed works costing not less than the amount equal to 80% of the estimated cost. (Rs.102.88 Lac)		

Note:

- In future if Kheralu Nagarpalika will verify the documents and if they found incorrect/fraud, contractor is responsible for punishment whichever is decided by Kheralu Nagarpalika.

Signature of Contractor

Chief Officer
Kheralu Nagarpalika,

SECTION - 11
SPECIAL CONDITION

Special Condition:

- EMD should be submitted only in form of FDR in favor of Chief Officer, Kheralu Nagarpalika, Kheralu.
- Before starting of work and work progress photograph must be taken by contractor and submit in hard copy and one soft copy in CD to chief officer, Kheralu Nagarpalika with every bill submission without any extra cost.
- One site engineer compulsory at site all the time when work in progress as well as Name & Contact number of site engineer given to the Chief Officer, Kheralu Nagarpalika for correspondent.
- Any defect on construction of Road/Building work on site as working progress as well as Three year of completion any defect in work, rectification of defect work by contractor to his own cost otherwise Security deposit of contractor should be for-fitted
- 5% performance bond and 2.50% security deposit amount will be deducted from the contractor's bill.
- 5% Performance Bond will release after completion of work & 2.50% Security Deposit & 2.50% deducted from RA bill of contractor will release after Three Year of defect liability.

Special Clause

(A) Royalties:

The contractor shall be liable to pay the royalty of the quarried materials / minerals used in the construction of works at the rates specified in the Narmada Water Resources, Water Supply and Kalpsar Dept. Resolution No. GEN-2010-595-(6) - M.I. Cell (k-1) Dtd. 29/4/2011 (Gujarati version, copy enclosed) and shall be recovered from the running bills of the work from time to time to time and remaining amount if any shall be recovered from the final bill before releasing the security deposit of the work.

The contractor shall furnished the statement showing the quantity of quarried materials / minerals from whom purchased (with full address of the seller) and copies of the bills for purchase to the Chief officer of the in charge of the work the contractor shall also furnish such additional information as regards royalty payments to the competent authority.

(B) Insurance

(As per Circular no તકેદારી એકમ/ઈનસુરન્સ કે શન ન ધ/૧૮૮ તા.૧૯/૩/૨૦૧૨)

1. Agency shall have to take insurance policy and intimate to Nagarpalika along with the evidence within time limit. In case of noncompliance entire responsibility shall be rest with the agency and required amount shall be recovered from any due amount of the agency.
2. Nagarpalika can recover penalty amount from the agency for not taking the insurance. Though the penalty amount is recovered, responsibility of the agency for taking insurance shall be continued and will not be escaped from this responsibility.